

214688

UNIVERSAL
LIBRARY

OU_214688

UNIVERSAL
LIBRARY

OUP—552—7-7-66—10,000

OSMANIA UNIVERSITY LIBRARY

Call No. *916/882A* Accession No. *4198*

Author *Jasper. H. Stenbridge*

Title *The New Oxford Geographies.*

This book should be returned on or before the date last marked below.

THE NEW
OXFORD GEOGRAPHIES

AFRICA

THE NEW OXFORD GEOGRAPHIES

Book I. LIFE AND WORK AT HOME AND OVERSEAS
Pp. 224, 24 plates, 62 text-figures.

II. THE SOUTHERN CONTINENTS
Pp. 324, 24 plates, 112 text-figures.

III. NORTH AMERICA AND ASIA
Pp. 328, 24 plates, 101 text-figures.

IV. EUROPE AND THE BRITISH ISLES
In preparation.

Section 2. THE AMERICAS
Pp. 300, 20 plates, 102 text-figures.

3. AFRICA, AUSTRALIA, AND ASIA
Pp. 304, 28 plates, 101 text-figures.

EUROPE. *In preparation.*

SOUTH AMERICA
Pp. 120, 8 plates, 46 text-figures.

AFRICA
Pp. 120, 8 plates, 29 text-figures.

AUSTRALIA, NEW ZEALAND, AND THE PACIFIC
Pp. 88, 8 plates, 27 text-figures.

NORTH AMERICA
Pp. 168, 12 plates, 47 text-figures.

ASIA
Pp. 152, 12 plates, 45 text-figures.

THE WORLD. Pp. 544, 48 plates, 311 text-figures, and a coloured map.

THE NEW OXFORD GEOGRAPHIES

By JASPER H. STEMBRIDGE

AFRICA



OXFORD
AT THE CLARENDON PRESS

1941

OXFORD UNIVERSITY PRESS
AMEN HOUSE, E.C. 4
London Edinburgh Glasgow New York
Toronto Melbourne Capetown Bombay
Calcutta Madras
HUMPHREY MILFORD
PUBLISHER TO THE UNIVERSITY

PRINTED IN GREAT BRITAIN AT THE UNIVERSITY PRESS, OXFORD
BY JOHN JOHNSON, PRINTER TO THE UNIVERSITY

PREFACE

IN writing the *New Oxford Geographies* I have laid emphasis on the human side of Geography, and, in the words of the Spens Report, I have tried to give 'a conception of the world and its diverse environments and peoples, which should enable boys and girls to see social and political problems in a truer perspective, and give them sympathetic understanding of other peoples'.

When I was requested by a number of teachers to undertake this series I asked them to co-operate with me in its planning and preparation. I owe more than I can say to their valuable suggestions and constructive criticisms. Particularly is this the case as regards the general scheme, which aims at providing a *graded* course for pupils in Secondary Schools who are working for the School Certificate and similar examinations. I have dealt with basic geographical principles as they have arisen in connexion with the various regions.

A study of the Geography syllabuses of some hundred and fifty schools showed that while almost all of them were based on the principles laid down in the Spens Report, there was a considerable divergence in detail. That, I think, was all to the good, but it does not lighten the work of an author, and to suit the curricula of different schools there are alternative arrangements of the continents.

Throughout the series I have tried to avoid over-generalization. I have used as often as possible concrete and detailed descriptions of places and scenes to exemplify and illustrate the way in which Man's life is conditioned by his environment, and how his activities are influenced by the seasonal rhythm.

In all the books maps and photographs are closely linked with the text. The maps are simple. They are designed to bring out salient facts and are intended to supplement, but not to replace, the maps in a good atlas. Each photograph has been selected for its geographical interest, and both in the underlines and in the text attention is drawn to the important features.

The exercises are intended to encourage the pupils to master the text, and also to make intelligent use of the maps and photographs, and of the indexes.

I may be excused for inviting special attention to the Index. Every student knows the value of an index as giving in detail the contents of the book, as making reference easy, and as bringing together the several places in which the same or cognate matters are discussed. Every progressive teacher knows the usefulness of an index in training pupils in the practice of finding out things for themselves. It is my earnest hope that the Index to each book will be found satisfactory to both teacher and pupil.

I should like to express my thanks for reading the proofs and for their criticisms to Mr. G. H. Ely, Mr. J. Myers; to my former colleague on the Board of Education Geography Panel, Mr. J. W. Page; and to Mr. A. L. P. Norrington of the Oxford University Press.

J. H. S.

OXFORD

August, 1941

NOTE

In this series Book II deals with the Southern Continents—South America, Africa, and Australia, in that order; Book III with North America and Asia. The matter contained in these two books is also obtainable in a different arrangement. Section 2 contains South America and North America, Section 3 Africa, Australia, and Asia. As this is a graded course South America is naturally treated on simpler lines than North America. Therefore, in the alternative arrangement, South America precedes North America, and, similarly, Africa and Australia precede Asia.

Each of the Continents is also obtainable separately.

CONTENTS

LIST OF PLATES	viii
I. The Awakening of Africa	I
II. Physical Features of Africa	15
III. Africa: Climate, Natural Vegetation, and Animals	20
IV. The Mediterranean Lands of North-West Africa	32
V. The Desert Lands—The Sahara and the Kalahari	39
VI. The Nile Lands	47
VII. The Guinea Lands	57
VIII. The Congo Basin	66
IX. An Ocean Highway: Abyssinia and the Horn of Africa	72
X. British East Africa	77
XI. Northern and Southern Rhodesia	85
XII. The Union of South Africa	91
XIII. African Islands	107
Index	110

LIST OF PLATES

	<i>facing p.</i>
1. SCENES IN THE KALAHARI AND THE SAHARA. Photographs by E.N.A. and Literary Services (Mondiale)	30
2. WHERE LIFE CHANGES LITTLE WITH THE PASSING CENTURIES. Photographs by Literary Services (Mondiale) and E.N.A.	31
3. ALEXANDRIA AND MARRAKESH (MOROCCO). Photographs by E.N.A. and Paul Popper	54
4. WEST AFRICAN SCENES. Photographs by Cadbury Brothers Ltd. and E.N.A.	55
5. DRYING CLOVES AND CUTTING SISAL. Photographs by Paul Popper and E.N.A.	78
6. HARVESTING COTTON AND TRANSPORTING GOODS IN MOZAMBIQUE. Photographs by E.N.A.	79
7. FARMING IN THE UNION OF SOUTH AFRICA. Photographs by the courtesy of the South African Railways	96
8. THE UNION OF SOUTH AFRICA—SCENES IN TOWN AND COUNTRY. Photographs by the courtesy of South African Railways and E.N.A.	97

AFRICA

CHAPTER I

THE AWAKENING OF AFRICA

The 'Dark Continent'

It has been aptly said that for centuries the white man nibbled at Africa without success, for only in the north did he manage to get a good bite until a century or so ago, and then he attempted to swallow the whole continent. To-day in many parts of Africa civilization has only just begun. It seems strange that, apart from Egypt and the lands along the Mediterranean littoral, most of Africa was almost unknown to Europeans until recent times; for the continent lies at the very doors of Europe and Asia; it is joined to the latter by the Isthmus of Suez, and from the former it is separated only by the narrow Strait of Gibraltar. Even America had been discovered and partly settled by white men while Africa remained the 'Dark Continent'. Why was it that Africa so long remained a land of mystery, its mighty deserts almost uncrossed, its vast forests unexplored, its great rivers unnavigated? The answer lies mainly in the geographical conditions: in the physical features, climate, and vegetation.

About three-quarters of Africa lies within the tropics: in no other continent is so great an area situated within these latitudes. The hot climate does not encourage people to be energetic: their needs are few and easily satisfied, and there is not the incentive to work that there is in temperate lands. Moreover, much of Equatorial Africa is unhealthy even for Africans, and quite unsuited for permanent settlement by white people.

The regular coast-line, with its lack of good harbours, proved a great handicap to the opening up of Africa. In

addition, owing to its immense size—it covers one-fifth of the land surface of the globe—vast areas lie far from the ocean. Long stretches of coast are bordered by inhospit-

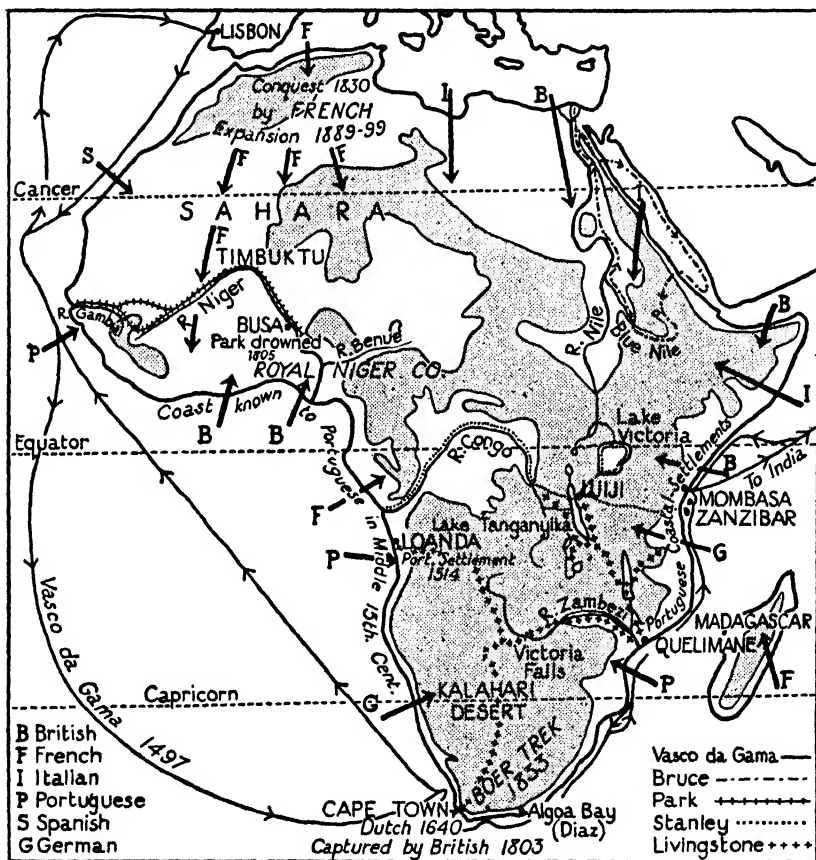


FIG. 1. Exploration of Africa.

The shading represents land over 1,500 feet

able deserts; others are margined by hot, wet, unhealthy forests which extend for hundreds of miles, and, in the case of the Congo region, for a thousand miles, or more, inland. Another obstacle to exploration lies in the fact that the narrow coast-lands are nearly everywhere bordered by

steep escarpments, that form a rim around the plateau of which the greater part of Africa is composed. Even the rivers hinder rather than aid penetration, for in their lower courses, where they fall over the edge of the plateau, they are impeded by rapids which prevent ocean-going vessels from travelling far up-stream. Only on the Nile are such rapids far from the sea.

Let us glance back to the lands along the Mediterranean seaboard of Africa, those lands which alone in this huge continent have for thousands of years been the homes of cultured peoples, such as the Egyptians; and which were settled by Phoenicians, Greeks, Romans, and Arabs, all of whom left their mark along the coastal fringe. It is the Sahara, rather than the Mediterranean, that forms the real division between Europe and Africa; for this enormous desert is a barrier between the peoples on either side, while the great sea is a link between them.

In Ancient Egypt

The dry atmosphere of Egypt has helped to preserve temples, and tombs like the Great Pyramids; age-old monuments such as the Great Sphinx; and other ancient buildings, all of which tell of people who were civilized thousands of years before the time of Christ. The ancient Egyptians regarded the Nile as a sacred river. To them it was a source of life, for without its waters and wonderful floods, which made irrigation possible, their land would have been a desert, part of the Sahara. Even their words for north and south meant 'up-stream' and 'down-stream'. In order that they might know when to expect the Nile floods they invented a calendar; and as long ago as 4241 B.C., the earliest date that archaeologists have been able to fix, the Egyptians had divided their year into 365 days. Safe in their fertile valley, protected on the east and west by the desert, on the south by unknown lands, and on the north by the marshy delta through which the Nile flowed into

the Mediterranean, they developed their wonderful culture. They were skilful farmers, irrigating their lands from the great river; clever craftsmen, working in metals, fashioning pottery, spinning, weaving, and dyeing cotton and flax, and making the materials into clothes. They built great cities. They had a knowledge of mathematics. They produced the first written documents. These were inscribed on papyrus (from which we derive our word *paper*), made by splitting the reeds growing by the Nile and pasting the edges together to form one long sheet; their ink consisted of soot mixed with gum, and their pens of pieces of pointed reed.

It was from the Nile, and the Tigris-Euphrates valley, that Europe received her first lessons in the arts and crafts of civilized life. The stream of civilization passed from North Africa, South-West Asia, and Crete, across the Aegean Sea to Greece and Rome, thence to Western Europe, and in modern times to the New World.

The Phoenicians

Greatest of the sea-faring folk of olden times were the Phoenicians, who lived along the coastal strip of Syria which was backed by the forested mountains of Lebanon. This palm-fringed shore, fronting the blue waters of the Mediterranean, was an ideal home for these merchant-traders who sailed throughout the almost land-locked sea, and passing through the Pillars of Hercules (now Gibraltar and Ceuta) ventured into the Atlantic. Carthage, their famous colony on the north coast of Africa, guarded the sea-gate between Sicily and Tunis, leading from the Western to the Eastern Basin of the Mediterranean.

About 600 B.C. a party of Phoenicians sailed round Africa from the Red Sea to the Mediterranean. Their galleys had both sails and oars, the latter being arranged in two or three banks. Each oar was manned by some six slaves, who were chained to it and kept at work by the lash of the overseer.

Is it not remarkable that under such conditions Africa was almost circumnavigated?

Hanno, a famous Carthaginian sailor, about 470 B.C., made his way along the west coast of Africa. Passing the desert shores of the Sahara he reached the forested mouth of the Senegal, where he saw fierce gorillas, huge crocodiles, and other strange animals. He tried to establish settlements, but finding this impossible carried back such unfavourable reports of the country that no further attempts were made to explore that part of Africa until the fifteenth century.

The Arabs

In A.D. 641 the Arabs invaded Egypt, and one section, the Berbers, overran Morocco, where their descendants live to this day. From their home in south-west Asia other Arabs sailed across the Indian Ocean to East Africa, seeking slaves and ivory, which they obtained from the tusks of animals. Those negroes who were able to escape their clutches took refuge on the grasslands of the interior or in the depths of the Congo forests. Wherever they went the Arabs introduced slavery, but they also spread Islam, based on the teaching of their great prophet, Mohammed, and so brought some degree of culture to the negro peoples. The chief Arab slave-markets were Zanzibar and Pemba, many of whose present inhabitants, like those along the adjacent coast-lands of East Africa, are descended from Arab slave-dealers and their negro wives.

The Portuguese

Early in the fifteenth century the Portuguese started their attempts to find a sea-route to India, for as the Turks held Egypt and the Mediterranean coasts of Asia they controlled the European trade with that continent. The Portuguese were fortunate in their ruler, Henry the Navigator, who established an observatory at Cape St. Vincent and engaged the foremost scientists and navigators of the day to train

his seamen. Gradually the Portuguese made their way along the west coast of Africa. In 1420 Madeira was reached; twenty-four years later Cape Verde; in 1484 Portuguese ships anchored in the estuary of the Congo, but owing to the rapids they did not go far inland, but sailed farther south and landed on the shores of what is now their possession of Angola. One of their most noted seamen was Bartholomew Diaz, who rounded the south-east of Africa and landed at Algoa Bay. But owing to signs of mutiny among his men he decided to return, and passing round Cabo Tormentoso, or the Cape of Storms, he eventually reached home. The King of Portugal was greatly impressed by the accounts Diaz gave of his voyage, but he decided to change the name of the Cape of Storms to the Cape of Good Hope, for he thought that the route round the southern end of Africa showed promise of being the sea-way to India.

Inspired by the example of Diaz, Vasco da Gama set out, in 1497, in command of four small ships. After four and a half months he reached the Cape. On Christmas Day he discovered Natal, which he named after the birthday of Christ. Pursuing his way along the east coast he arrived at Mombasa whence he sailed for India, and thus showed that it was actually possible to reach that country by voyaging round the south of Africa.

For a long time the scattered Portuguese settlements along the coasts of Africa were used merely as ports of call on the way to India, and for trading purposes to obtain slaves, gold, and ivory. Thus, although the outline of Africa was known by the end of the fifteenth century, its vast interior still remained wrapt in mystery.

Dutch Settlers

In 1652 the Dutch East India Company established a settlement at the Cape of Good Hope, but the colony was not well ruled, and by the end of the eighteenth century

was almost bankrupt. The British occupied Capetown from 1795 to 1803, and when some years later they restored to the Dutch some of their possessions they kept the Cape. Meanwhile British colonists settled round Port Elizabeth and Grahamstown in the south-west, and Durban, in Natal.

There were frequent disputes between the British and Dutch, and the latter determined to leave the Cape and seek fresh lands farther afield. So they set out on their famous and heroic trek. With great difficulty they made their way up the steep escarpments to the plateau beyond. Day after day their covered wagons, drawn by yokes of stalwart oxen, lumbered across the wide wind-swept veld, in some places almost impassable owing to belts of thorny scrub, and in others because of deep, rock-strewn watercourses, which after heavy rain were quite unfordable. Beside the wagons rode the sturdy Boer farmers on horseback, their rifles slung over their shoulders, always on the alert for hostile tribes of natives; while inside sat their wives and children amidst the household goods, often their sole possessions.

At last these pioneers forded the Orange River. In the region beyond some settled and founded the Orange Free State; but others went still farther north, and crossing the river Vaal established the Transvaal.

There were various wars between the British and Dutch, but in 1902 the Transvaal and the Orange Free State came under British rule, and in 1910 Cape Colony and Natal, and the two Boer states were united to form the Union of South Africa.

Modern Exploration

Of the famous men connected with the exploration of Africa three Scotsmen—Bruce, Park, and Livingstone—were outstanding. In the latter part of the eighteenth century James Bruce discovered the source of the Blue

Nile and followed the river to its confluence with the White Nile.

Mungo Park, a young surgeon in the service of the African Association, did much to explore the Niger. In his last journey his boat was wrecked at the Bussa rapids. He was attacked by hostile natives and jumping into the river with his three surviving companions was drowned. Park had collected more information than any preceding explorers, and had ascertained that the Niger flowed direct into the sea and was not, as had been supposed, a tributary of the Congo.

Greatest of the African explorers was *David Livingstone*, a medical missionary who arrived at the Cape in 1841. During his thirty years' work his travels extended from the Cape to the Equator, and from the Indian Ocean to the Atlantic. Soon after his arrival in Africa he was sent north to establish a mission-station in Bechuanaland, where for a time he lived among the natives, learning their language and customs. The year 1846 saw Livingstone in the Transvaal, where he taught the people how to irrigate their land. In 1849 he crossed the north-east border of the Kalahari Desert and discovered Lake Ngami. Two years later Livingstone reached the Zambezi, and thence, after great hardships, journeyed to Loanda on the west coast, somewhat south of the mouth of the Congo. On his return journey he discovered the Victoria Falls, and then travelled down the Zambezi to Quilimane on the Indian Ocean, having thus crossed Africa from coast to coast.

During his subsequent journeys Livingstone made his way up the Shiré to Lake Nyasa. It was at this lake in 1866 that he was deserted by many of his followers, who returned to Zanzibar and reported that he had been killed by Zulus. But the undaunted explorer pressed on into the heart of Africa. In his journal he tells us how he took his belt up three holes to relieve his hunger, when owing to the loss of his goats he was reduced to living on maize. Other disasters

befell him. His medicine chest was stolen; more porters left him; but through dripping forests and oozing bogs he struggled until he reached Lake Tanganyika, and then travelling south discovered Lake Bangweulu, where most of his remaining followers departed. Worn out and ill from the many hardships he had undergone, Livingstone was carried in a litter to Ujiji, on the eastern shore of Lake Tanganyika, where to his dismay he found that the stores he had left there had been sold.

A relief expedition under the command of Henry Morton Stanley had been sent to Africa to discover the truth about Livingstone. Leaving Zanzibar, Stanley journeyed inland, and guided by reports that there was a white man at Ujiji he made all possible speed and reached the village on October 28th, 1871. The two men spent some time exploring the north end of Lake Tanganyika. Then Stanley tried to persuade his companion to return home with him, but Livingstone refused to leave the land in which he had toiled so long, and Stanley set out for Zanzibar without him, carrying the welcome news that the intrepid explorer was still alive though in bad health. Meanwhile porters were sent to the sick explorer, who made his way to Lake Bangweulu, travelling through swamps infested with stinging ants and poisonous spiders. Worn out by fever and hunger he was carried by two faithful natives from village to village. Day after day, bearing their beloved master, they toiled on through the marshy forests. But on the morning of May 1st, 1873, when they went to wake him, they found Livingstone dead, kneeling by his bedside. His followers embalmed his body as best they could, and wrapping it in sailcloth carried it half-way across Africa to the east coast. From Zanzibar the remains of the great Scotsman were conveyed to England, where they were buried in Westminster Abbey.

Of the great explorer Stanley writes: 'In the annals of exploration of the "Dark Continent" we look in vain among

other nationalities for such a name as Livingstone's. He stands pre-eminent above all; he unites in himself all the best qualities of other explorers. . . . Britain excelled herself when she produced the strong and perseverant Scotsman, Livingstone.'

Great as was Livingstone's work of exploration, his crowning achievement was that he brought about the end of the slave-trade. Fully he carried out his motto: 'Fear God and work hard.'

Stanley's Later Work. Stanley went back to Africa and during his journeys discovered the principal source of the Nile; explored Victoria Nyanza, Lake Tanganyika, and Albert Nyanza; and by discovering that the Lualaba was the headstream of the Congo proved that there was a great waterway leading into the very heart of tropical Africa.

Failing to arouse the interest of British merchants in his discoveries, Stanley enlisted the aid of Leopold II of Belgium, who established a chain of trading stations along the banks of the Congo and obtained control of the High Katanga district, rich in minerals and, owing to its elevation, one of the few parts of the basin suited to European settlement. Considerable portions of the Congo region were secured by France and Portugal, but most of it ultimately became the Belgian possession of the Congo Free State.

Africa To-day

We have seen something of the part played by the Portuguese, British, Dutch, and Belgians in the opening up of Africa, but French, Germans, Austrians, Italians, and Spaniards have all shared in making the 'Dark Continent' known, and so paved the way for its colonization by European powers. To-day a belt of territory, stretching from the Anglo-Egyptian Sudan to the Cape, forms part of the British Empire, as do Nigeria and other colonies in West Africa. The French rule most of Northern Africa,

where their possessions extend from Northern Africa to West Africa and the Congo, and also include the island of Madagascar and French Somaliland. The Belgians own the greater part of the Congo Basin; the Portuguese the adjacent state of Angola as well as Mozambique in East Africa. The Italians claim Libya, and Italian East Africa, which includes Eritrea, Abyssinia, and Italian Somaliland. The only two independent native states are Egypt and the negro Republic of Liberia.

Thus mainly under the guidance of Europeans, or people of European descent, Africa is being developed and her backward races are becoming civilized. Roads and railways are being built and fresh air routes opened up. Doctors and scientists are working to improve conditions in unhealthy areas; missionaries and teachers are educating the people; traders and trading companies are extending their operations in many directions. Africa, once the 'Dark Continent', is slowly yielding her treasures for the benefit of the world at large. And these treasures are many and varied. Not only does the continent produce minerals, especially gold and copper, but also commodities such as palm oil, cacao, copra, and cotton, all of which are greatly in demand by manufacturers in the industrial countries of the temperate zone.

The Peoples of Africa

There are as many differences between the various peoples of Africa as there are between those living in Europe. South of the Sahara most of the native Africans are of negro blood. Northern Africa is inhabited mainly by Hamites, who belong to the south Mediterranean branch of the white race. The Berbers of the Atlas lands, the Tuaregs who roam over the Sahara, the peasants of Egypt, and the Masai herdsmen of Kenya are all of Hamitic stock.

On the southern margin of the Sahara, where the desert merges into the savannas of the Sudan, and Hamites and

negroes meet, there has been much intermarriage; and the Hausas and Fulani of Northern Nigeria, and other peoples, are mixed races who are lighter skinned than pure-blooded negroes.

The typical negro is very dark, with woolly hair and of fine stature, but some are lighter than others. The Sudanese negroes, who, as their name implies, are found in the Sudan, and the negroes of West Africa, are usually very dark brown, with thick lips, and broad flat noses. The Bantus, numbering some forty million, who inhabit Africa south of the Sudan, are as a rule lighter in colour than the Sudanese, and their noses are less broad and flat.

The pygmies who live in the depths of the Congo forests are supposed to be akin to those other primitive people the Bushmen, who dwell in the Kalahari Desert. The latter have yellowish-brown skins, bulging foreheads, prominent cheek-bones, and hair growing in tangled patches. Their neighbours the Hottentots, a mixed race with some Bushman blood, are more advanced, being herdsmen as well as hunters and collectors.

The native Africans are at all stages of civilization, ranging from the Egyptians down to the primitive pygmies. The pygmies and the Bushmen are collectors and hunters; the Fulani who live on the savannas are herdsmen. Many tribes combine herding with primitive agriculture; but others, such as the cocoa-farmers of the Gold Coast and the cotton-cultivators of the Anglo-Egyptian Sudan, grow cash crops for export. Some, among them many of the West African negroes, are skilled craftsmen; others, like the Hausas, have for centuries been merchants and traders. But most of these people, be their work hard or relatively easy, lead lives that are natural to their environment, though in some cases their mode of living has been affected by the coming of the white man.

Most of the people of European descent are found either along the Mediterranean seaboard, or in South Africa.

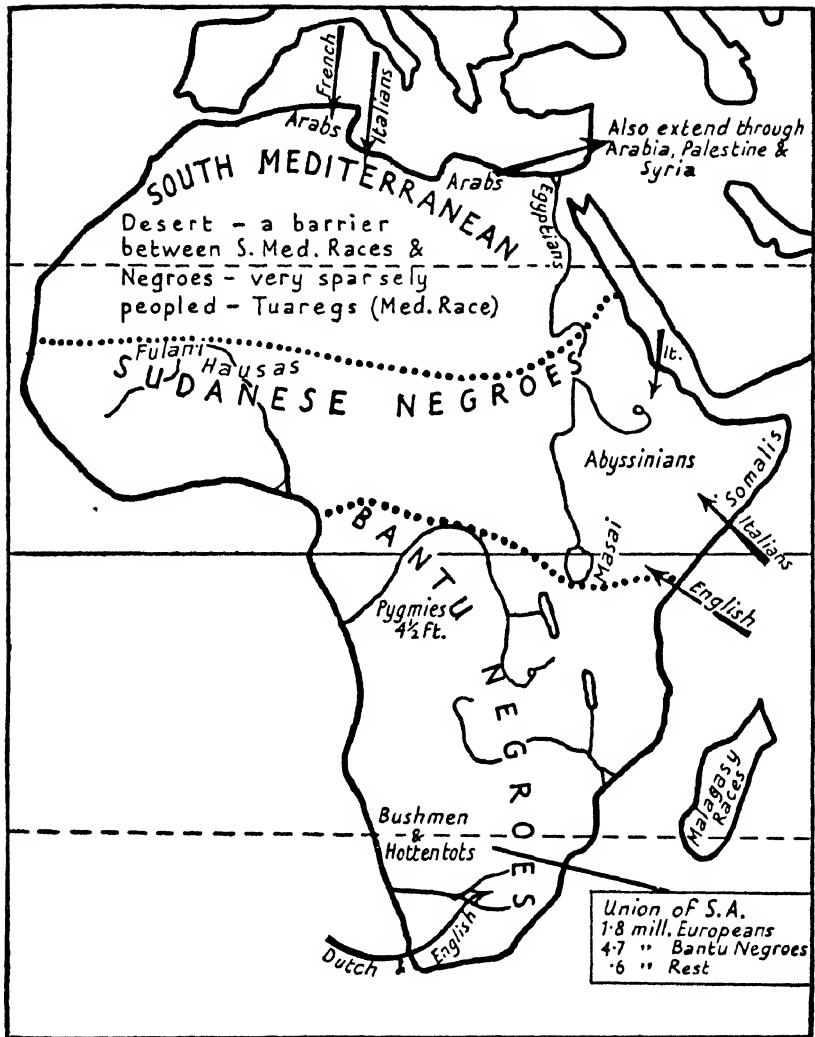


FIG. 2. Africa: Peoples

There are many French settlers in Algeria and Tunisia, while numbers of Italians have settled in the latter country as well as in the adjacent land of Libya, easily accessible from Italy. In the Union of South Africa the white people are mainly of Dutch and British descent. A relatively small number of whites have made permanent homes in highland regions, such as Kenya and Rhodesia, where the elevation, by reducing the tropical heat, makes the climate suitable for settlement.

EXERCISES

1. Describe the chief difficulties encountered in the opening up of Africa.

2. Give examples of native Africans who are (a) hunters; (b) herdsmen; (c) farmers who grow cash crops for export; (d) traders and merchants. Give *two* reasons explaining how the mode of life of *one* of the above peoples is adapted to their environment.

3. Choose one African explorer and give some account of his work.

CHAPTER II

PHYSICAL FEATURES OF AFRICA

The African Plateau

AFRICA, the second largest continent, is joined to Asia by the Isthmus of Suez, now cut by the Suez Canal which links the Mediterranean with the Red Sea. It closely approaches Europe at the Strait of Gibraltar and the Strait of Tunis, and at one time the two continents were actually connected at these points. Like the Southern Continents of South America and Australia, Africa is very compact and has an almost unbroken seaboard.

In the north-west the Earth's surface has been crumpled to form the parallel ranges of the Atlas Mountains, which are part of the Old World fold-mountain system that stretches from the Mediterranean region, through Asia to the Himalayas.

But, apart from the Atlas, nearly the whole of Africa consists of a plateau where the rock layers lie more or less horizontally. This plateau, which rises by steep escarpments from narrow coastal plains, consists of two portions, partly separated by the saucer-like depression of the Congo Basin. The greater part of the *North-West Plateau*, comparatively low, is occupied by the Sahara Desert and the adjacent savannas of the Sudan. The much loftier *South-East Plateau* extends from Abyssinia to the south of Africa. It may be divided into: the Abyssinian Plateau, the Central East African Plateau, in the middle of which lies Lake Victoria, and the South African Plateau, south of the Zambezi, whose eastern edge is formed by the Drakensbergs. The island of Madagascar forms a detached portion of the African Plateau, from which it is separated by the Mozambique Channel.

The South-East Plateau is crossed from north to south by two remarkable valleys, one in the east and the other farther west, which resemble huge troughs. Unlike the Nile

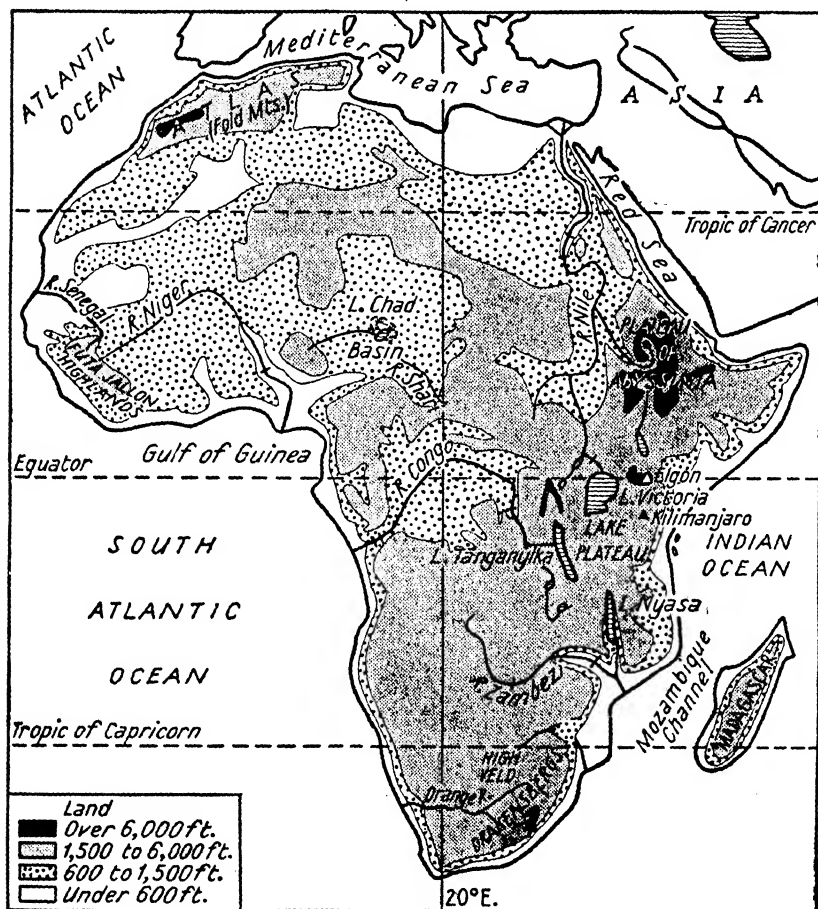


FIG. 3. Africa: Natural Regions

valley, they were formed not by the eroding action of a river, but by Earth movements.

We know that beneath the solid crust of the Earth internal forces are continually causing rearrangements to take place. Sometimes, as we have seen, the crust crumples and folds.

Sometimes it cracks under great strain, forming *faults*. When faulting takes place the strata on either side of the fault line sometimes slip against each other: one part rising up, the other slipping down and so forming terraces. In certain areas the horizontal layers of rock of which much of the African Plateau is composed were faulted in this way; and on the east, west, and south, the plateau descends by giant terraces to coastal plains, or low hills.

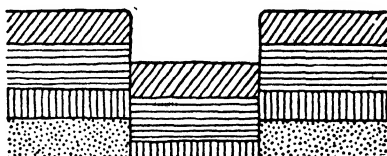


FIG. 4

When two parallel faults occur, the strata between them often slip down, forming a valley whose sides rise steeply from its flat floor (see Fig. 4). Such a valley is called a *rift valley*. The *Eastern Rift Valley*, which trenches the African Plateau, is part of a great depression extending from Palestine through the Red Sea. Thence it may be traced through Abyssinia, past Lake Rudolf and smaller lakes, to Lake Nyasa. This flat-bottomed, steep-sided valley, from 40 to 60 miles wide, lies from 1,500 feet to 2,500 feet below the level of the surrounding plateau. The *Western Rift Valley* runs from Lake Nyasa, through Lake Tanganyika, to Lake Albert. These lakes, which are extremely deep and have precipitous sides, are called *rift valley lakes*. Lake Tanganyika is some 400 miles long and from 30 to 40 miles broad, and in places over 2,000 feet deep. Above its waters rise the scarped fronts of the surrounding plateau, which can be seen from shore to shore across the lake.

Lake Victoria, on the other hand, is a *basin lake*, lying in a comparatively shallow hollow on that portion of the plateau which rises between the Eastern and the Western Rift Valleys.

The disturbances in the Earth's crust which caused the formation of the rift valleys were accompanied by volcanic activity. The active volcano of Kirunga overlooks the Western Rift Valley; while on the east side of the Eastern Rift Valley the extinct volcanic peaks of Kenya (17,000 feet), on the Equator, and Kilimanjaro (19,300 feet) rise to summits ever clad with ice and snow.

The Rivers

The Congo, the Nile, the Zambezi, and the Niger are the longest rivers in Africa. The Congo and the Nile rise in the equatorial wet belt. The former river carries more water to the sea than all other African rivers combined, and its basin is exceeded in size only by that of the Amazon. The Nile, on the other hand, receives no tributaries in its middle and lower course, for it flows through a desert area. As the courses of the Niger and the Zambezi lie mainly in the savanna belts, their waters are highest in the hot wet season, and lowest during the cool dry season.

Though many of the African rivers are navigable for long stretches in their plateau courses, they are interrupted by rapids and falls where they tumble over the edge of the table-land to the coastal plain, or where they descend from higher to lower levels on the plateau itself. Only in the case of the *Nile* are these rapids far from the sea. Vessels of moderate size can ascend that river to the Aswan Dam, at the First Cataract. During the flood-season a lock allows vessels to proceed up-stream to Wadi Halfa, at the base of the Second Cataract, a distance of over 1,000 miles from the Mediterranean. The *Niger* is navigable to Rabba, 400 miles from the sea, and then, above a long stretch of rapids, for some hundreds of miles where communication is carried on by large shallow steel canoes. The *Zambezi* has a number of impassable rapids in its lower course. Ocean steamers can ascend the *Congo* to Matadi, a distance of 93 miles, above which the river pours over many falls

and rapids, which are avoided by a railway 200 miles in length. Above the rail-head the river is navigable for over 1,000 miles to Stanley Falls. Here, and at another series of falls higher up the Congo, transport is taken up by railways.

Of the chief lakes of Africa, Lake Victoria—the second largest sheet of fresh water in the world—is drained by the Nile, as also is Lake Tana in the Abyssinian Highlands; Lake Tanganyika, during the wet season, by the Congo; and Lake Nyasa by the Shiré, a tributary of the Zambezi. On the other hand, Lake Chad, on the southern margin of the Sahara; Lake Ngami, in the Kalahari Desert; and Lake Rudolf, in the Eastern Rift Valley, have no outlets to the ocean. Only a few streams enter these lakes which form centres of *Inland Drainage*. They are very salt, for as they lose much water through evaporation, large quantities of dissolved salts are left behind. Such salt lakes are often found in regions with little rainfall, where high temperatures (during at least part of the year) cause great evaporation.

EXERCISES

1. Draw a diagram to show how a rift valley is formed. Name an important rift valley in Africa.
2. What are the advantages and disadvantages of the African rivers for navigation? How do you account for the presence of falls and rapids on these rivers?
3. What do you understand by a region of inland drainage? In what parts of the world would you expect to find such areas? Give two examples (i) from Africa and (ii) from America.

CHAPTER III

AFRICA: CLIMATE, NATURAL VEGETATION,
AND ANIMALS

Climate

AFRICA is the only continent crossed by the Equator, the Tropic of Cancer, and the Tropic of Capricorn. As it extends for almost equal distances north and south of the Equator the climatic belts are very similar on either side. About three-quarters of the continent lies within the tropical belt which is hot throughout the year, for the Sun is always overhead in some part of this region and consequently its rays shine down more or less directly over the whole area. But, owing to the elevation, the heat over a great part of the continent is less than would otherwise be the case, for temperatures decrease 1° with every 300 feet of ascent.

On account of Africa's almost unbroken coast-line, the moderating influence of the ocean does not extend far inland into the interior. This is especially the case in the northern part of the continent, which is not only broader than the southern portion but also joins the great land mass of Eurasia.

Temperature. Look at the map (Fig. 5) showing the July temperatures of Africa. At this season the Sun is overhead at the Tropic of Cancer (June 21st), and the hottest part of the continent lies north of the Equator, where temperatures over the Sahara and the Nile valley are very high. In the Sahara, owing to the lack of protective vegetation and to the absence of cloud, the ground gains heat rapidly in the day, and loses it equally rapidly at night. Thus there is a great difference between the temperature during the day and that at night: in other words, the daily range of temperature is great.

South of the Equator July is a winter month. Cape-

town is then about as warm as the north of Scotland is in summer.

Gradually the Sun appears to move south, and the belt of greatest heat—the 'Heat Equator', as it is called—swings

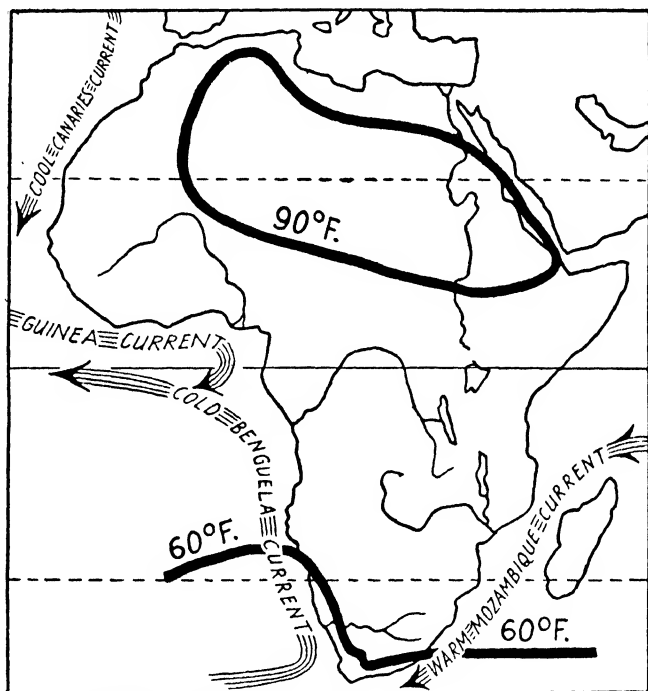


FIG. 5. Africa: July temperature

south too, but it moves more slowly than the Sun because the land takes some little time to get really hot.

Now look at the map showing the January temperature (Fig. 6).

By December 22nd the Sun is overhead at the Tropic of Capricorn. The hottest regions lie south of the Equator. South Africa is now enjoying summer. January and February are the hottest months at Capetown. In January the north of Africa is comparatively cool. In the Sahara average winter temperatures are about the same as in

England during summer, while in January Algiers is about as warm as Capetown in July.

The temperature maps show us that throughout the year the west coast of South Africa is cooler than the east coast.

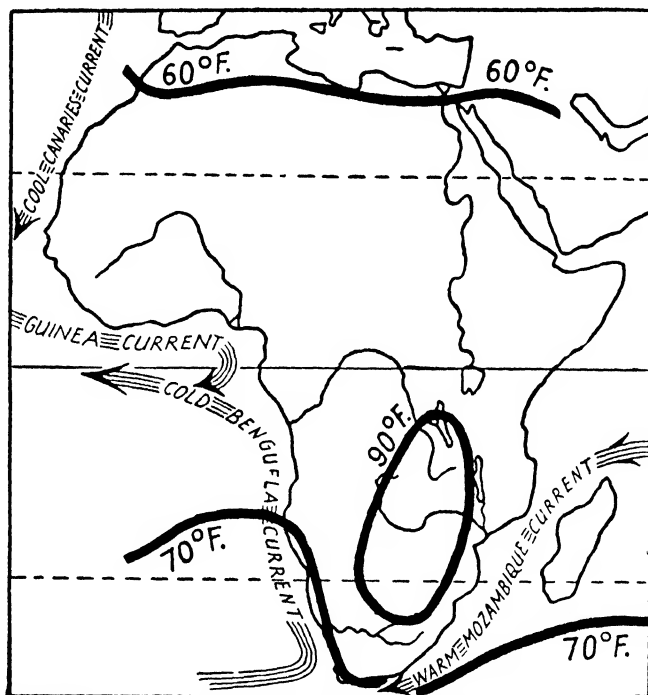


FIG. 6. Africa: January temperature

This is because the cool Benguela Current, which runs north along the west coast, cools the winds that blow over it, while they, in their turn, tend to cool the coastal regions. The warm Mozambique Current, running south along the east coast, raises the temperature of that region.

Rainfall swings with the Sun. When we were studying South America we learnt that there were certain well-marked belts of winds blowing over the Earth's surface, and we saw how great was their effect on the climate of that continent.

In Africa the high-pressure belts, with outflowing winds, stretch right across the north and south of the continent, as does the low-pressure belt, with inflowing winds, which lies around the Equator.

When the North-East and South-East Trade Winds, blowing from the high-pressure belts to the equatorial low-pressure belt, meet, then currents of heated moisture-laden air rise, and being cooled by expansion cause heavy convectional rains (see p. 20, Pt. 1). Hence in the equatorial belt rain falls throughout the year, but is heaviest shortly after the equinoxes in March and September.

Now, as we have seen, the 'Heat Equator' moves north and south with the apparent movements of the Sun. In a similar way the pressure, wind, and rainfall belts move north and south too. But though *the position of the noon overhead Sun varies from $23\frac{1}{2}^{\circ}$ N. at the Tropic of Cancer to $23\frac{1}{2}^{\circ}$ S. at the Tropic of Capricorn, the wind and rainfall belts move in the same direction only about 5° (i.e. 5° N. and 5° S. of the Equator (see Fig. 7)). If the Sun were always overhead at the Equator, the regions of greatest heat, and the pressure, wind, and rainfall belts, would not alter their positions.*

When the equatorial wet belt swings north with the Sun, the savannas lying on the north side of this belt receive summer rains, but the southern savannas are dry. When the equatorial wet belt swings south these conditions are reversed. The southern savannas receive summer rains, and the northern savannas have their cool dry season.

Now turn to Northern Africa. The North-East Trade Winds blowing across this great land-mass are dry, because as they move towards the hottest part of the continent they become warmer, and so tend to gather moisture rather than to deposit it. Thus in the trade wind zone there is a dry belt over the Sahara. There is a corresponding dry belt in the Kalahari Desert, lying on the western side of South Africa. We saw that in South America the Atacama Desert lies in a similar dry belt, on the west side of that continent. Neither

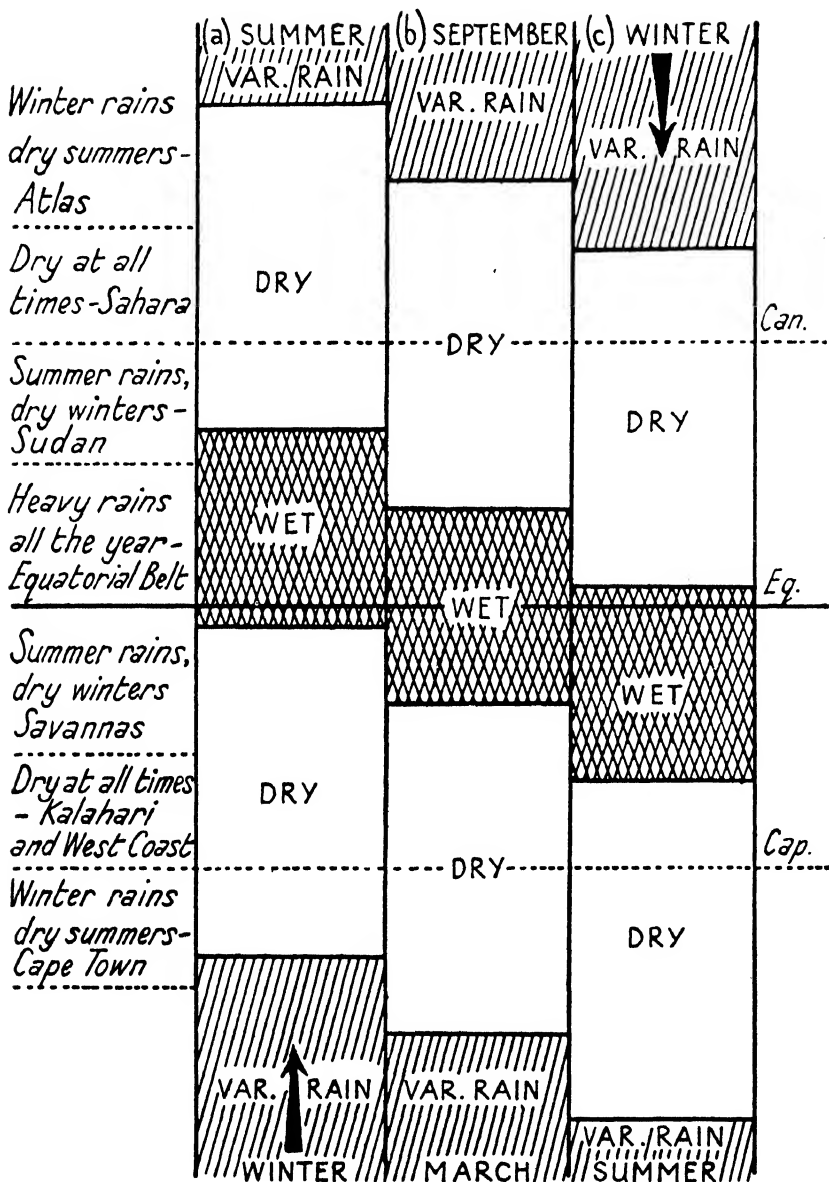


FIG. 7. Swing of the rain belts

the Kalahari Desert nor the Atacama Desert extends right across its respective continent, partly because in both cases the South-East Trade Winds blow from the ocean on-shore towards the east coast. This dry belt is found in the trade wind zones on the west side of all the continents.

Hence the equatorial wet belt gradually passes on the north and south, through regions of summer rains, into dry belts where the rainfall diminishes with increasing distance from the Equator.

North of the Sahara the lands bordering the Mediterranean have dry summers and rainy winters. This is because in summer, when the wind and rainfall belts swing north, they lie in the dry Trade Wind Belt. But in winter, when the wind and rainfall belts swing south, the Mediterranean Lands lie in the belt of the Westerly Variables, which blow on-shore and so cause rain. This type of climate, as we learnt in the case of Central Chile, is called a Mediterranean Climate, because it reaches its greatest extent around the Mediterranean Sea. The diagram, Fig. 7, clearly shows the seasonal swing of the wind and rainfall belts.

Look at the map (Fig. 8) showing the rainfall from May to October. Remember that the rainfall belts have swung north, with the apparent movements of the Sun, as shown in column (a) of Fig. 7.

1. The extreme south-west of Africa receives rain, for it lies on the northern edge of the Variable Rain Belt which has shifted north.

2. The west coast, to the north of the latter region, receives little or no rain, for it still lies in the Dry Belt.

3. The Savanna lands, immediately to the north, lie in the Dry Belt and receive practically no rain.

4. The wettest region in the continent lies a little north of the Equator, though the actual region round the Equator itself remains on the margin of the Equatorial Wet Belt. One of the wettest portions in this belt is found along the coast-lands of the Gulf of Guinea, for there the Trade Winds

blow in from the ocean and deposit heavy rain on the windward slopes of the highlands.

5. The Sudan—the savanna region stretching from the middle Niger to Abyssinia—which lies on the northern edge of the Equatorial Wet Belt, is receiving summer rains.

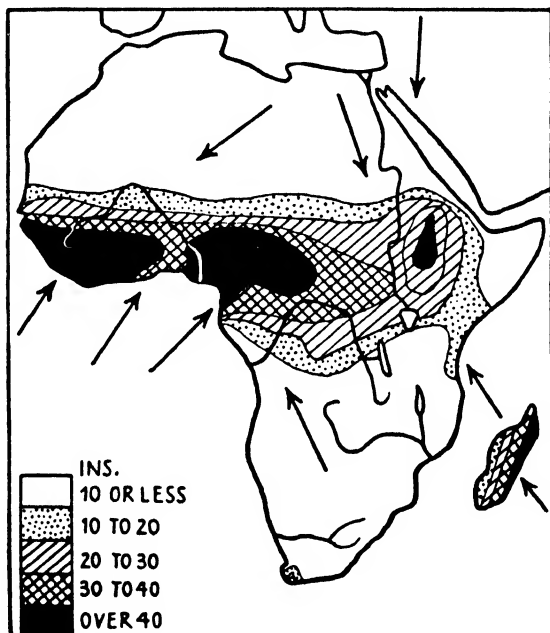


FIG. 8. Africa: Rainfall, May to October

6. The Sahara is still in the Dry Belt.

7. The Mediterranean Lands of Northern Africa are also receiving little rain, for now they lie on the northern margin of the Dry Belt.

Now turn to the map (Fig. 9) showing the rainfall from November to April. The wind and rainfall belts have swung south as shown in column (c) of Fig. 7.

1. The lands bordering the Mediterranean Sea receive winter rain, for now they lie on the southern edge of the Variable Rain Belt that has shifted south.

2. The Sahara remains dry, for it still lies in the Dry Belt.
3. The Sudan is also dry, for it lies on the southern edge of the Dry Belt which has shifted south.
4. The wettest region lies a little south of the Equator.

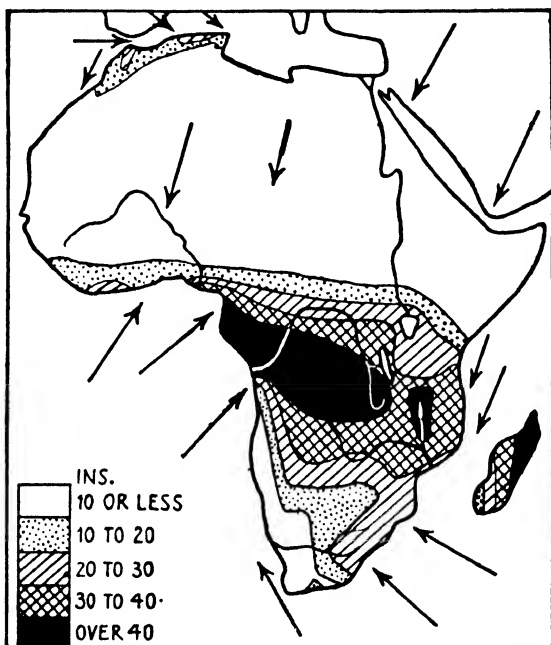


FIG. 9. Africa: Rainfall, November to April

5. The southern savannas are receiving summer rains, for they lie on the southern edge of the Equatorial Wet Belt.
6. The west coast of Africa is dry, for both the Kalahari Desert and also the extreme south-west now lie in the southern Dry Belt, where the South-East Trades are blowing off-shore. But the east coast of South Africa, where the South-East Trades are blowing on-shore from the Indian Ocean, receives rain.

Natural Vegetation and Animals

In Africa, as we have seen, the rainfall belts on either side of the Equator correspond closely to one another. As rainfall, more than any other climatic factor, affects natural

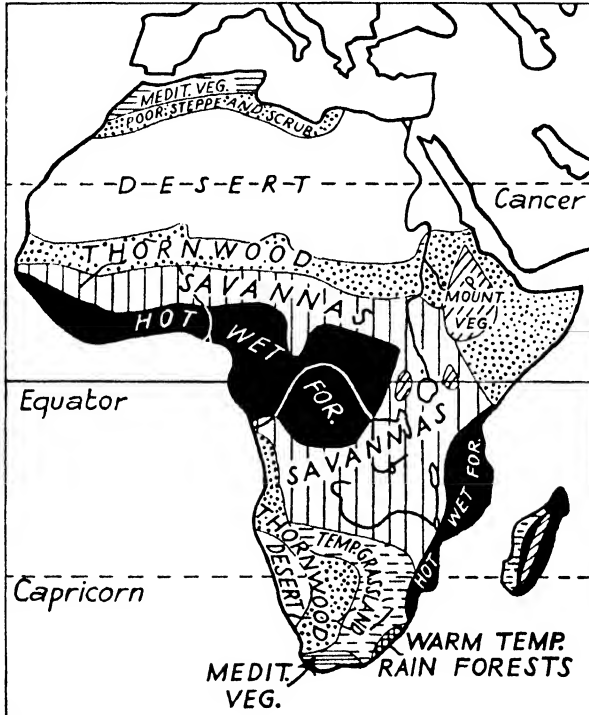


FIG. 10. Africa: Natural Vegetation

vegetation, we find very similar vegetation belts on both sides of the Equator.

1. *The Equatorial Forest Belt.* Dense forests spread along the shores of the Gulf of Guinea and cover the greater part of the Congo Basin. As the climate is always hot and wet there is no resting time for plants and trees, and so the vegetation is rank and luxuriant. From the dense undergrowth spring palms of various kinds, and other giant trees,

many festooned with vines, and creepers with aerial roots called *lianas*. Along the east coast of tropical Africa is a belt of somewhat more open forest, where the trees are smaller and the woodlands broken with stretches of thorn-bush.

In the hot wet forests food is abundant throughout the year, and because of the high temperatures the animals do not need warm coats like those living in the coniferous forests. Owing to the dense vegetation there is little room to move, and many animals are mainly tree-dwellers; such are the gorilla and the chimpanzee, whose long arms enable them to swing from branch to branch. Some animals, like the hippopotamus, which lives chiefly on roots, grass, and aquatic plants, live by the rivers; and others, such as the elephant, are found in the more open areas where the forests merge into the savannas.

The Savannas. Except in the western lowlands of the Congo Basin, and along the Gulf of Guinea, the hot wet forests are surrounded by savannas. The grasslands of the Sudan stretch from the Upper Niger to Abyssinia, thence southward through East Africa to Angola and Rhodesia. In the dry cool seasons the savannas are withered and brown, but as soon as the rains commence the grass springs up in clumps from 6 to 12 feet high. Belts of trees of various kinds form 'gallery forests' along the valleys, but on the savannas themselves the scattered acacias and baobabs are of the drought-resisting type, able to withstand the lack of moisture in the dry season.

Hoofed animals, like antelopes, giraffes, and zebras, are herbivorous, feeding on grass and foliage. The long neck and forelegs of the giraffe enables it to reach the leaves and juicy shoots of trees like the acacias, which it greatly relishes. These ungulates can move swiftly from place to place in search of food, which is often scarce in the dry season, or when pursued by their enemies, such as lions, hyenas, and other carnivores (flesh-eaters).

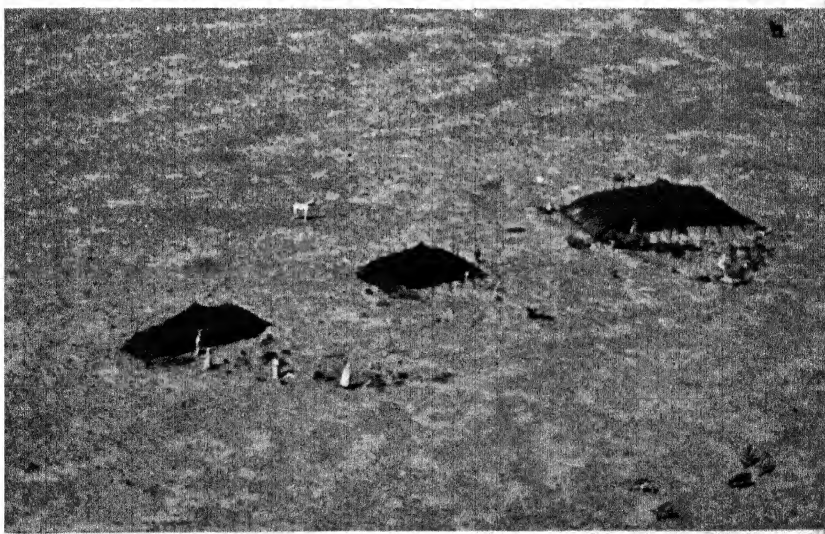
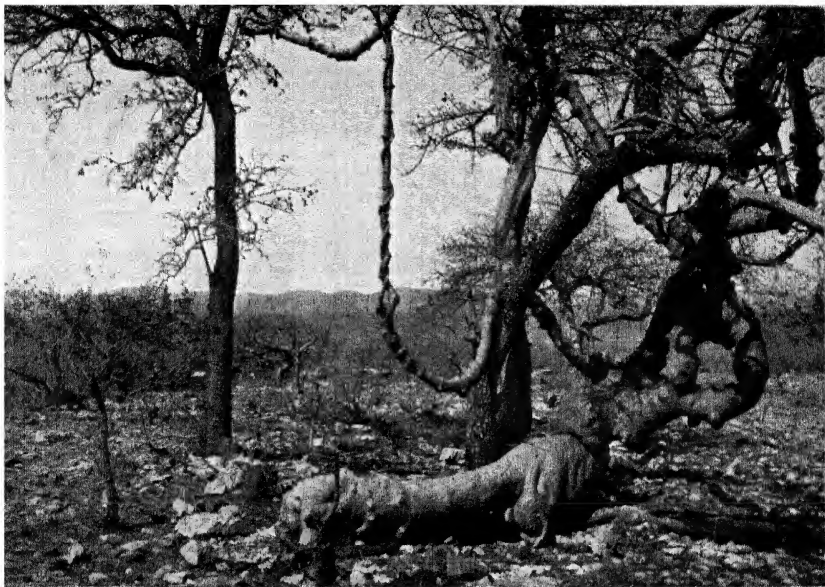
Tropical Thorn-bush. On their poleward sides, as the dry

season grows longer and longer, the savannas become more and more arid until they merge into the thorn-bush which margins the deserts. In some places the grey scrub of prickly leafless bushes forms an impenetrable jungle; in others it consists of more open bush separated by patches of rocky and stony ground. Here and there are umbrella-shaped acacias and other drought-resisting trees whose leathery leaves are covered with a prickly brown wool. Desolate indeed is the scene during the long dry season when the sun blazes down fiercely upon the parched rock-strewn land. 'Grey is the landscape, grey the stony ground, and grey to silver-white are the trees and bushes around. Here and there large grey lizards sun themselves and grey monkeys now and then appear in the tree branches, but these are the only signs of life in these deadly calm surroundings.'¹ But during the rainy season a transformation takes place; and for all too short a time the scrub is decked with flowers, buds open, countless herbs spring from the soil, and the whole landscape is clothed in a mantle of green. But the verdant season is soon over. Green gives way to gold, and gold to grey, as the plants wither and sink into their long summer sleep.

The Hot Deserts. The transitional thornwood belt merges into the Sahara on the north and the Kalahari Desert on the south. In the Sahara monotonous stretches of flat-topped rocks, ridges, and wave-like dunes spread to the horizon. Cultivation is only possible in the oases, where date-palms thrive, and cereals and vegetables are grown in little irrigated fields. The chief animal is the camel, but antelopes may sometimes be seen on the desert margins, as well as lions, whose uniform colouring blends equally well with the rocks and sands and the brown savanna grasses.

The Mediterranean Lands. Both in the Mediterranean countries of Northern Africa, and in those with a similar climate in South Africa, the natural vegetation is adapted

¹ M. E. Hardy, *A Junior Plant Geography* (Clarendon Press).



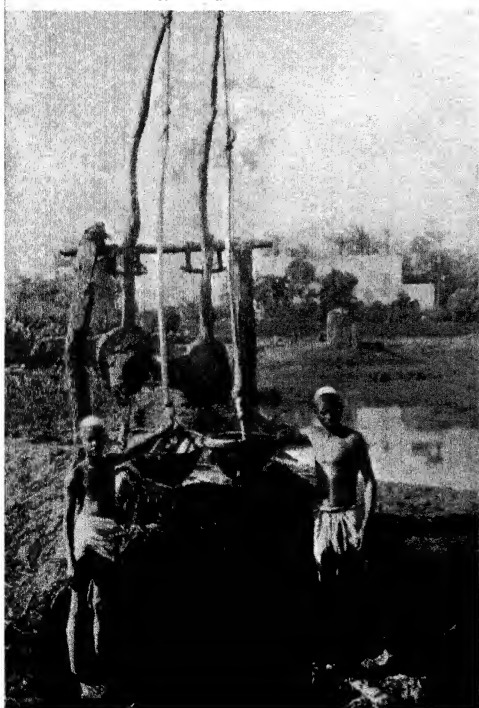
I. SCENES IN THE KALAHARI AND THE SAHARA

(Above) This scene well shows the nature of the ground and the vegetation of the Kalahari, which is not a true desert like the Sahara. This giant creeper is slowly strangling a thorn-tree (see p. 44). (Below) The low black tents, woven from camel-hair or sheep-wool, of a Bedouin encampment on the edge of the Sahara. The strong short shadows give a good idea of the intensity and height of the sun. The animals are widely scattered owing to the sparseness of the herbage (see p. 42).



2. WHERE LIFE CHANGES LITTLE WITH THE PASSING CENTURIES

(Above) The characteristic feature of this village, near the Niger in the Western Sudan, is the tiny spire at the top of the huts. The large jars are used for storing grain, ground-nuts, and so on. The goat tethered to the hut, and the hen, are typical of African villages (see p. 62). (Below) Fellahin working a shaduf on the Nile. The bowls are dipped into the water and raised by means of the counterweights at the thick end of the poles. The whole operation takes little more than a second (see p. 54).



to withstand the long summer drought. Evergreen shrubs, such as myrtle and laurel, have thick, hairy or oily leaves which help to prevent undue loss of water.

Warm Temperate Grasslands cover much of the High Veld of South Africa.

In Natal *Warm Temperate Rain Forests*, of wonderful luxuriance, stretch from the lower seaward-facing slopes of the uplands to the coast. Along the coast grow coconut and other palms, also sugar-cane and banana plantations.

Mountain Vegetation. In Abyssinia and the Lake Plateau of East Africa, the hot wet forests of the valleys or coastlands are replaced at higher elevations by cool temperate forests with junipers, cedars, and other trees. Above, at still greater heights, forests are succeeded by upland pastures and mountain vegetation, which ultimately merges into the eternal snows.

EXERCISES

1. (a) On what dates is the Sun overhead at the Equator?
(b) What are these dates called? Why?
(c) Where is the Sun overhead on June 21st?
(d) Where is the Sun overhead on December 22nd?
(e) In what months is the region of greatest heat around the Equator?
(f) During what months does the region of greatest heat lie (i) north, and (ii) south of the Equator?
2. What are convection currents? Illustrate your answer by a diagram. (see *South America*, p. 20).
3. Why is the west coast of South Africa cooler than the east coast?
4. Find the following on a map of Africa: Capetown, Lagos, Khartoum, and In Salah (Sahara). State at what season each receives most of its rain. In the case of *one* of them give the reasons for your answer.
5. (a) Name *three* wild animals living in the equatorial forests, and *three* found on the savannas. (b) Show how *one* in each region is adapted to its environment.
6. (a) What is the name of the desert on the west coast of South Africa? Account for its position, illustrating your answer by a sketch-map. (b) What deserts are found in similar latitudes along the west coasts of (i) South America, and (ii) Australia?

CHAPTER IV

THE MEDITERRANEAN LANDS OF NORTH-WEST AFRICA

Between the Mediterranean and the Sahara

NORTH-WEST AFRICA consists of Morocco, Algeria, Tunisia, and Libya. These countries have a Mediterranean climate, with a varying amount of rain in winter, and hot dry summers, when day after day the sun blazes down from a cloudless sky. The rainfall decreases from the Atlantic seaboard eastwards; and from the Mediterranean southward towards the desert margin. Behind the Mediterranean coast-lands rise the Atlas, which extend from the Atlantic eastward to the Gulf of Quabes; farther east lie the lowlands of Libya, backed by the Saharan Plateau. In the west, where the ranges rise to over 13,000 feet, snow-clad peaks tower into the limpid blue. Between the Maritime and Saharan Ranges of the Atlas lie High Plateaux, dotted in the west with salt lakes, called *shotts*, that are often of considerable size. To the south, the ranges descend to the Sahara.

Morocco, Algeria, and Tunisia

In Morocco, Algeria, and Tunisia we may distinguish three Natural Regions: (1) the Coast-lands and the Tell; (2) the High Plateaux and Ranges of the Atlas; and (3) the Saharan Region.

1. *The Coast-lands and the Tell.* Picture a rocky coast where low broken ranges drop to the sparkling blue waters of the Mediterranean Sea. Between these ranges and the main chain of the Atlas lies the Tell, which consists mainly of rolling country cut up into many fertile plains and valleys. The Tell stretches westward into Morocco, where a strip of barren country separates it from the coast; and eastward

into Tunisia. The slopes of the hills are planted with olives, which require little moisture, and vines which thrust their long roots far into the soil in search of water. The lower parts of the valleys, irrigated, and carefully cultivated, are green with orange and lemon groves, and fields of tobacco. Much barley and wheat are grown on the plains. Sown in autumn, and watered by the winter showers, these cereals are harvested in April and May respectively. Owing to the lack of summer pasture, due to the absence of rain, few cattle are bred. But many sheep and goats are grazed on the uplands, where the rough herbage is broken by stretches of evergreen shrubs, growing about as high as a man's knee, and forests of cork-oak, cedar, and squat flat-topped Mediterranean pines.

The large farms are owned by Frenchmen, who adopt large-scale methods and use modern machinery. The smaller ones belong to the Arabs or Berbers whose ways are more primitive. They cut their wheat and barley with sickles, and take it to the village threshing-floor where donkeys or oxen tread out the grain, while the winnowing is done by tossing it into the air and allowing the wind to blow away the chaff. Most of the Berbers live in the compact villages in the valleys, or in hill-top towns which in more warlike days, before French rule, provided protection against enemies.

2. *The High Plateaux and Ranges of the Atlas.* On the sheltered High Plateaux, lying between the Maritime and the lower Saharan ranges of the Atlas, the rainfall is less and the winters are decidedly colder than those of the Tell. Much of this upland region is covered with esparto grass, used for making paper; and with sweet-smelling herbs on which sheep and goats, which thrive in this dry region, browse in charge of swarthy men and lads. Some of these folk belong to the Kabyle tribes, descendants of the people who lived in this part of Africa before the Arabs swept over the country in the eighth century.

The Saharan Margin. As we should expect, the Saharan slopes of the Atlas receive little rain. Here and there, amidst the waste of flat-topped rocks and sand, oases are found where underground springs, or the artesian wells that have been bored in recent years, supply water to irrigate the thirsty land. The graceful palms surrounding such oases provide dates, which are their main, if not their only export. From such oases as Colomb-Bechar or Touggourt the dates are sent by rail to the coast for export. From others, like Taflet, they are dispatched by camel caravan.

Morocco

Morocco was for long the home of bellicose tribes whose chief occupations were robbery and fighting, and even to-day the Moors are noted for their war-like disposition. But these sturdy warriors have been subdued, and the country, though still nominally governed by a sultan, is under the protection of France and Spain. The French protectorate comprises the greater part of Morocco. The Spanish zone is in the north where the chief port, *Ceuta*, faces Gibraltar, on the opposite shore of the narrow strait leading from the Atlantic to the Mediterranean. *Tangier*, a little to the west, is an international port.

The valleys trenching the western end of the Atlas, and the lowlands, stretching to the Atlantic, are the most productive and thickly peopled part of the country. But where irrigation is not possible the vegetation dies, and the desert gradually closes in on these green oases. Standing in an oasis of palms, with the snow-capped peaks of the Atlas in the distance, is *Marrakesh*, a caravan centre (Plate 3). In the streets, Moors in flowing robes, Jews and negroes, veiled women, and nomads from the desert pass to and fro. An occasional motor-car may be seen, but for the most part transport is carried on by camels and mules. Somewhat similarly placed, and surrounded by olive groves, is *Fez*, another caravan centre. Both towns are linked by rail with

the modern port of *Casablanca*, whose white-walled houses overlook the great harbour built by the French on the Atlantic seaboard. From *Casablanca* considerable quantities of fruit and vegetables are sent by air to *Toulouse*, in France.

Algeria

Algeria, lying between Morocco and Tunisia, is four times the size of France, and has a population of somewhat more than seven millions. Little more than a century ago the ports along the coast were the haunts of blood-thirsty pirates who scoured the Mediterranean, descending on peaceful merchant-vessels, and, raiding far and near, sacked the coastal towns of Italy and Spain. Algiers was one of the strongholds of these pirates. From time to time, British, French, and Dutch fleets bombarded the city, but still the Arab pirates flourished. It was not until 1827 that France finally captured the city, and thus laid the foundations of what is now the most prosperous of her colonies.

The French have done much to develop Algeria by building roads and railways, encouraging agriculture, and promoting mining. Much iron-ore is mined round *Philippeville* and *Oran*, and phosphate rock, used for fertilizing the land, is quarried. Railways link Algiers with *Casablanca* and *Tunis*, while several lines run inland, across the Tell, and through steep valleys in the Atlas to the edge of the Sahara. One such line goes from *Oran* to the oasis of *Colomb-Bechar*. Another runs from the port of *Philippeville*, by way of *Constantine*, and through the shadow-filled El Kantata gorge—a deep cleft in the rocky wall—to *Biskra*, a caravan centre on the edge of the Sahara, whence, for military purposes, the railway has been pushed south to the oasis of *Touggourt*.

Algiers, a city of 250,000 people, and the capital of the colony, stands on a long sweeping bay, backed by low hills that rise steeply from a fringe of golden sands. One of the

chief ports in Northern Africa, it is 400 miles from Marseilles, the French port through which passes the bulk of Algeria's overseas trade. The exports of the colony remind us that agriculture is the mainstay of the country. They include wines, cereals, sheep, olive-oil, and esparto, as well as iron-ore and phosphates. The chief imports, which remind us of the undeveloped state of manufacturing, are textile goods, motor-cars, beet-sugar, machinery, and coal.

Tunisia

Tunisia, with its wheat-lands, vineyards, orchards, and olive groves, lying between the Mediterranean and the Sahara, is a French Protectorate. In addition to the Arab population there are a number of French colonists and Italian settlers, for Tunisia lies relatively close to Sicily and Southern Italy.

The railway from Algiers runs through the fertile Majerda valley to *Tunis*. The capital consists of an old walled town, and newer quarters beside the harbour, from which a deep-water canal runs to the sea, some 6 miles away. The carpets, leather, metal goods, and pottery displayed in the bazaars of the old quarter show that many of the people of Northern Africa are skilled and artistic craftsmen. Tunis is situated south of the site of Carthage, the historic Phœnician city destroyed by the Romans, which commanded the route from the western to the eastern basin of the Mediterranean. To-day, the naval port of *Bizerta* stands sentinel over this important sea-gate on the route to India and the Far East. *Sfax*, second only in importance to Tunis, exports grain, olive-oil, phosphates, and wines, mainly to France.

Libya (Tripoli)

By annexing Tripoli, in 1912, the Italians extended their territory into that part of Northern Africa which was the great granary of the Roman Empire. Libya, as Tripoli is

now called, is four times the size of Italy, but in the whole country the coastal region is the only area suited to cultivation, for the greater part lies within the Sahara where fertile spots are confined to oases, such as Ghadames and Kufra. Even in the coastal belt the winter rains provide insufficient moisture; for most crops irrigation is necessary, though the area available for farming has been extended by

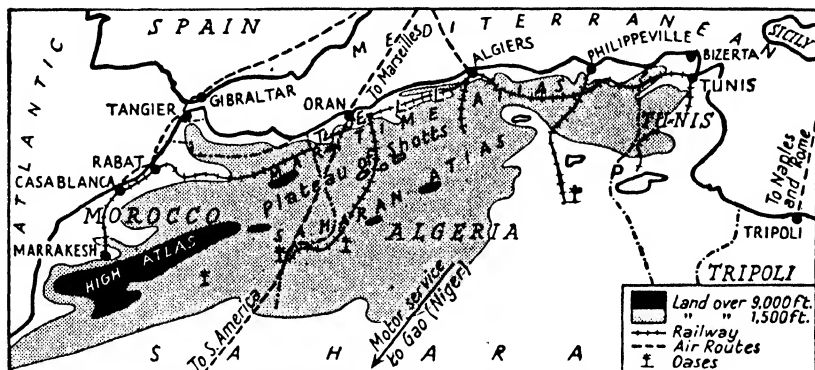


FIG. 11. Morocco, Algeria, and Tunisia

boring artesian wells. Wheat, vines, olives, oranges, and mulberries are cultivated, while the dunes have been planted with pines, acacias, and other trees. Swarthy fishermen, as in centuries past, dive for sponges and catch tunny in the coastal waters.

On its landward side the coastal belt rises to the edge of the African plateau, passing through steppe-desert into the Sahara. In the steppe zone the Bedouin Arabs grow barley and wheat, returning from their seasonal migrations in November to sow their crops, and in April or May to harvest them. But the rainfall is scanty and unreliable, and cultivation is correspondingly difficult. The dry climate is better suited to herding, and the chief wealth of these nomads—if wealth it can be called—lies in their flocks of sheep, goats, and camels which browse on the stunted bushes and tufts of yellowish grass.

The native population consists mainly of Arabs and negroes, descendants of slaves brought from the Sudan. Most of the European settlers are Italians, the majority of whom are farmers living in the coastal zone. Many peasants settled here in 1938 and subsequently, under a mass-migration scheme organized by the Government. In 1938, 1,800 families, drawn from all parts of Italy, and with an average of ten persons to a family, were established on new farmsteads. Their houses were furnished for them, and they were supplied with implements, seed, and cattle. With a view to further development of the country, and for strategic purposes, the Italians have built a motor-road, stretching for 1,200 miles along the whole length of the coast from the Tunisian to the Egyptian frontier.

Tripoli, the capital, a city with 100,000 inhabitants, once one of the dirtiest and most unhealthy of Mediterranean ports, is now clean and prosperous. There is a daily air-service to Rome. Like *Benghazi*, on the Gulf of Sidra, it is a caravan centre, whence trains of camel cross the Sahara following routes used from time immemorial. Much trade is also carried on by vessels, plying between the ports, or sailing across the Mediterranean to Malta, Syracuse, Naples, and Genoa.

Libya was conquered by British troops in 1940-1.

EXERCISES

1. (a) Describe, without reasons, the chief features of a Mediterranean climate. (b) On which side of the continents is this type of climate found? (c) Name *one* region, outside Africa, which has this type of climate.

2. Into what *three* natural regions may we divide Morocco, Algeria, and Tunisia? Confining your answer to *one* of these countries describe the chief products of the most important region and show how the plant life is related to the climate.

3. Say what you know of the following towns, and in each case draw a sketch-map to illustrate your answer: Algiers, Tripoli, and Tunis.

4. Show how the lives of the people living in Libya are adapted to their environment.

CHAPTER V

THE DESERT LANDS—THE SAHARA AND THE KALAHARI

The Vast Sahara

BOTH the Sahara and the Kalahari lie in the trade wind belts. The Sahara is the greatest desert in the world. It stretches for 1,200 miles from the Mediterranean Lands southward to the savannas of the Sudan; and for 3,000 miles from the Atlantic to the Red Sea, beyond which deserts and arid lands extend north-east to the Gobi Desert of Central Asia. The Kalahari of South Africa is much smaller. It is confined to the western side of the continent, for the South-East Trade Winds blowing from the Indian Ocean bring rain to the eastern part of this region.

Owing to the swing of the rain belts, the northern margin of the Sahara receives about 10 inches of rain during winter, and the southern margin approximately the same amount in summer. The highland belt, stretching across the Sahara, is also more fortunate in its rainfall than the lower portions of the great table-land. But most of the Sahara is quite rainless for years on end, though occasional down-pours occur at intervals varying from two to as much as seven years. Then the *wadis* are filled to the brim, and the underground water-supplies lying in the valleys replenished. The atmosphere is so dry that it is almost impossible for anyone who has not experienced its intense and parching dryness to conceive what it is like. Both the seasonal and the daily range of temperature are great. In summer the heat is intense. Even in winter it is as hot in the daytime as it is in England in the height of summer. The absence of clouds allows the sun to beat down fiercely upon the bare ground during the day, but at night temperatures fall

quickly, because owing to the absence of cloud radiation is great and the escaping heat is unchecked.

As a result of rapid expansion during the day, and equally rapid contraction at night, the surface layers of the rock split—often with such explosive violence that travellers say that their night's rest is sometimes disturbed by the noise of

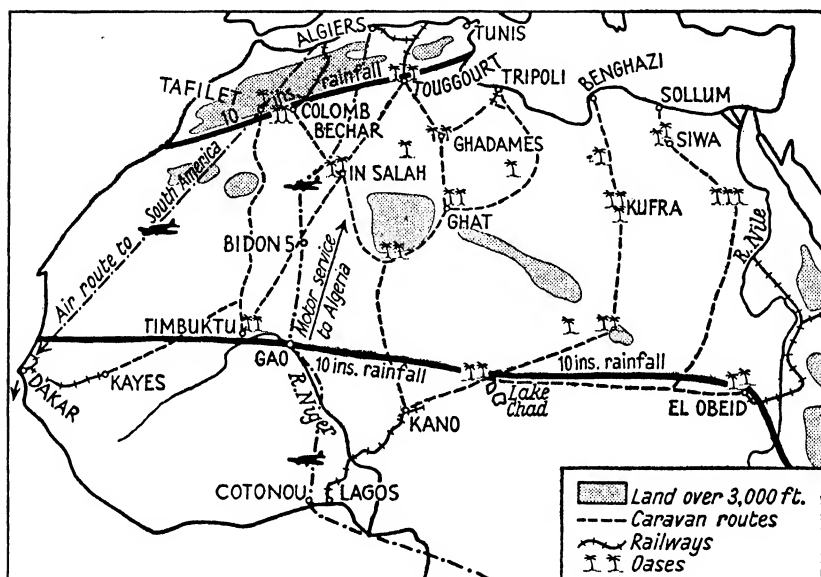


FIG. 12. The Sahara

'explosions', caused by the breaking fragments of rock. The broken pieces are scattered in all directions. The smaller ones are carried by the wind, driven against rock faces, and ground down into sand.

The surface of the Sahara is of three types—rocky, stony, and sandy. The chief areas of rocky and stony desert lie in the west, and in the centre, where they stretch from Lake Chad northward to the Tibesti Highlands. Flat-topped plateaux and bare hills, separated by *wadis*, characterize the rocky regions, while the stony districts consist of barren wastes of pebbles.

Sandy desert, or *erg*, extends from the frontier of Egypt, through Libya, into the region south of the Atlas Mountains. The dunes are swept by the wind into wave-like ridges, several hundreds of feet high, which slope up gradually on their windward side, but drop steeply on their leeward side. In some cases the surface is quite hard, but in others the valleys between the dunes are filled with sand so soft that camels sink knee-deep into it, making travel difficult even for experienced cameleers.

In some districts grasses and dwarf bushes, whose long roots go down to great depths in search of water, help to bind the sand-dunes together. In regions which receive some rain, as for example the desert margins, coarse steppe and scrub provide grazing for animals. But large areas are almost devoid of vegetation: such, for instance, is the Tanezruft, the dreaded 'Land of Thirst', in the Central Sahara.

Oases—Gardens of the Desert

The oases, which lie in depressions, or along the foot of heights, where underground supplies of water have collected, form belts of green amidst the sun-baked rocks and orange-coloured sands. Under the shade of date-palms, cereals such as millet, barley, and wheat are cultivated; and vegetables, cotton, tobacco, and sugar-cane are grown in banked-up fields criss-crossed by irrigation channels. Sometimes the water is drawn from wells, but usually it is obtained from pools from which it runs through a main channel into innumerable smaller ones, the flow being regulated by means of sluices. Owing to the great evaporation the ground becomes very salt, and unless well manured is quite useless after a number of years. In the date-groves manuring is especially important. The oasis-folk grow most crops for their own use, but dates are produced mainly for export.

Some oases are quite small, being only an acre or so in

extent, but others are much bigger. Tafilet, Colomb-Bechar, and Biskra, lying south of the Atlas Mountains; Tuat in the north-west of the Sahara; and Kufra and Siwa in Egypt are all large, each having thousands of date-palms, and containing several compact and densely peopled villages.

Such villages consist of a number of houses built of stone or mud, with flat roofs. They usually contain a mosque, a school, and a market-place where the sellers squat behind their wares laid out on the ground. In these settlements, encircled by walls, as much for protection against encroaching sand as for defence against foes, the oasis-people lead a tranquil life. Their way of living is very different from that of the herding-tribes, who from the necessity imposed by the seasonal scarcity of pasture are nomadic. These herdsmen exchange their wool and hides for dates and other crops grown by the oasis-folk. But no love is lost between the pastoral nomads and those who till the land.

Camel, Car, and 'Plane

For centuries trade in the Sahara has been carried on by camel caravans. Routes go from well to well, and from oasis to oasis, avoiding so far as possible the *ergs*, and crossing the rocky and stony areas where the 'going' is easier. Journeys take weeks and often months; for though racing camels can cover a hundred miles a day, baggage camels can only do from 20 to 25 miles. Sometimes those fearful sandstorms, called *simooms*, are encountered; or, what is worse, travellers arrive at a well only to find that it has dried up and the next one is far ahead. Then death stares them in the face. On occasions merchants are attacked by robber bands, such as the veiled Tuaregs, long known as raiders, who swoop down upon any caravan that is not strongly guarded. But in the Sahara the dangers that threaten travellers are not so great as formerly, owing to the strong

rule of the French and the Italians, who keep troops to maintain order, and have built forts, linked with the outside world by telegraph, radio, and aeroplane, as well as by swift camel corps.

Nowadays the number of caravans engaged in trans-Saharan trade is decreasing, for goods are conveyed by camels to railhead towns on the desert margin, such as Colomb-Bechar and Touggourt in Algeria; El Obeid in the Anglo-Egyptian Sudan; and Kano, in Northern Nigeria.

Transport is also carried on by means of lorries and motor buses—strange, streamlined vehicles, with rows of portholes along each side, whose average speed is from 10 to 20 miles an hour. On recognized routes there are petrol stations about every 60 miles—isolated posts where water costs almost as much per gallon as the petrol itself. For instance, Bidon 5 petrol station, in the centre of the Sahara, is 300 miles from the nearest water-supply. Its steel aerial lighthouse by day looks like a giant skeleton against the brazen sky; but by night sends its guiding beams far across the desert. The aeroplane annihilates distance, though its use is confined mainly to officials, as owing to the high cost this form of transport is for the few rather than the many.

Land travel over the desert is undoubtedly hard and monotonous. But to those of us who have observed it from the air the landscape presents a fascinating sight. Ridges and valleys, rocks and boulders stand out in bold relief. Here in an oasis, with its palms and flat-roofed houses, the people themselves can be clearly seen, as they pause in grove and field to look up at our winged liner zooming overhead. And there a line of shadows on the sand soon proves to be those of camels padding their way across the lonely waste.

Camel, car, and aeroplane, each faster than the other, bridge the Sahara, once almost unknown but now being steadily opened up.

The Kalahari

Though parts of the Kalahari consist merely of arid wastes, this region is not a true desert like the Sahara, and is by no means entirely waterless. The rainfall is light, but the occasional showers stir into life dormant seeds that grow rapidly, and for a space carpet the ground with flowers. To quote an explorer of the Kalahari: 'After rain the long grasses shoot up green, succulent, and elbow deep; flowers spangle the desert in every direction; the air is full of fragrance; and the hollows on every side are filled with water. But another month and all is drought; the hollows, or pans, are dry again, and travel is full of difficulty.'

The lack of vegetation is, of course, due to absence of rain, for plants require moisture in order to live. They gather it from the soil through their roots and give it out through their leaves. Thus many grasses and plants have very long roots which extend far into the ground in search of moisture; and others have bulbous, water-storing roots protected by a leathery coat. Some, like the cactus, have tough thick skins, which help to lessen the loss of moisture. Thorn bushes, greyish-green sage bushes, and trees like the tamarisk have tiny tough leaves, which are further aided against loss of water by a coating of wax or hairs.

In the Kalahari desert there are scattered springs and water-holes, but no large oases like those in the Sahara. Neither are there civilized peoples like the Arabs and other South Mediterranean folk who dwell in the great desert of Northern Africa. The only people who live in the Kalahari are the yellow-skinned dwarf Bushmen and the Hottentots. Skilful hunters and trackers, the Bushmen have marvellous powers of endurance and will follow a wounded giraffe, gazelle, or leopard for miles until finally exhausted it falls a prey to their bows and arrows. They have no permanent homes but build rough shelters, or take refuge under bushes or in caves. Their language consists of a series of clicks

made by the tongue. The Hottentots, somewhat more advanced than the Bushmen, are, like them, few in number.

EXERCISES

1. (a) With the aid of your atlas make a list of the chief deserts in (i) the Southern Hemisphere, and (ii) the Northern Hemisphere.
(b) What tropic crosses (i) the Sahara and (ii) the Kalahari desert?
2. Compare the life led by the people living in the oases of the Sahara with that of the nomadic folk.
3. Describe a journey *either* by camel caravan, *or* motor, *or* aeroplane from Colomb-Bechar (Algeria) to Gao, on the Niger.

CHAPTER VI THE NILE LANDS

The Nile

THERE is no river quite like the Nile, the third longest and one of the most interesting streams in the world. It is 4,000 miles in length, but in the last 1,700 miles of its course it receives no tributaries. Yet its waters alone make possible that irrigation upon which the prosperity of Egypt depends.

Flowing out of Lake Victoria, the Nile tumbles over the Ripon Falls and speeds over numerous rapids, to the northern end of Lake Albert. In this upper portion of its course the river maintains a constant flow throughout the year, being fed by the heavy equatorial rains stored in the natural reservoirs of the great lakes.

On leaving Lake Albert the Nile is navigable as far as Nimule, on the frontier of Uganda and the Anglo-Egyptian Sudan. Beyond this town rapids prevent the passage of river-craft, and the northward journey must be made by the motor-road that runs for about 100 miles to Rejaf, where it is joined by another road, completed in 1935, coming from Stanleyville on the Congo. At Rejaf the traveller embarks on a river-steamer bound for Khartoum. In this part of its course the Nile flows through a swampy region, sometimes expanding into lakes and sometimes dividing into a number of channels. Masses of floating vegetation called *sudd* often block the main stream and its tributaries. Sometimes the latter are dammed up by the *sudd*, forming temporary lakes, called *raft lakes*, which, however, soon dry up owing to the great evaporation. The steamer pushes its way onwards between marshes where papyrus, lilies, and other water-plants grow in rich profusion; where crocodiles bask on the mud-banks and hippopotami wallow in the mud.

After receiving the Bahr-el-Ghazal, on the left bank, the

Nile turns east. But beyond its confluence with the Sobat, which descends from the Abyssinian Highlands, the river resumes its northerly course. The rainfall grows steadily less and the savannas, stretching beyond the low-lying banks, gradually merge into the scrub belt which forms the transitional zone between the hot grasslands and the desert. Nine days after leaving Rejaf the steamer reaches Khartoum.

At Khartoum, the Blue Nile, which flows out of Lake Tana, high up in the Abyssinian Plateau, enters the main stream. At Berber the Atbara—also descending from the Abyssinian Plateau—joins the river. Beyond this point the Nile receives no tributaries, and for 1,700 miles flows through an almost rainless region, where it has cut a valley, margined by cliffs rising in some cases to over 1,000 feet, beyond which stretch the orange sands and flat-topped rocks of the desert.

The heavy summer rains of Abyssinia cause the Sobat, the Blue Nile, and the Atbara to rise rapidly, and rushing down the steep mountain slopes they pour their mud-laden waters into the Nile. These Abyssinian affluents begin to rise in June and their flood-water reaches Aswan, in Egypt, about mid-September, and Cairo a month later. In Egypt there is a difference of from 30 to 50 feet between high- and low-water levels. So great indeed is the amount of water brought down by the Blue Nile that it actually dams back, for a time, the waters of the main stream, which do not reach Egypt until the winter season, when they help to preserve the flow of the Nile after the main flood-waters have subsided.

Between Khartoum and Aswan, navigation on the Nile is interrupted by a series of six rapids, called cataracts, where the river rushes over beds of hard resistant rock. Below Aswan the Nile valley grows still narrower, being bordered on both sides by the edges of the plateau which form precipitous sandstone cliffs from 2 to 15 miles apart.

At Cairo the Nile enters the great delta it has built up at its mouth. When a river reaches the sea its current is checked, and so it deposits some of the sediment it carries, thus gradually building up an island which, owing to its resemblance to the Greek letter Δ , is called a delta. In addition to the sediment deposited by the river, floating vegetation and drift brought by currents aid in building up the delta, across which in the course of time the river cuts *distributaries* to allow its waters to reach the sea. Deltas are common in seas like the Mediterranean, where there is little tide to scour out the mouths of the rivers and carry their sediment away instead of allowing it to settle.

The Anglo-Egyptian Sudan

The Anglo-Egyptian Sudan, which has an area of nearly a million square miles and a population of about six millions, is governed jointly by Britain and Egypt.

The central portion of the Anglo-Egyptian Sudan forms part of the great savanna belt stretching from the Abyssinian Highlands to the Atlantic, and lying between the Sahara Desert on the north and the equatorial forests on the south. The whole of this belt forms the actual *Sudan*, a word meaning 'the Land of the Blacks', so called because of its indigenous negro population.

Since the Anglo-Egyptian Sudan extends from latitude 5° N. to about latitude 20° N., a distance of approximately a thousand miles (15×70), it passes from the forested equatorial region of the south, through the savanna belt, into the desert and arid area of the north. Hence the mode of life of the people differs according to the climate and natural vegetation of the region in which they live. The differences due to environment are increased by the fact that the inhabitants of the south are mainly pagan negroes, while those of the north are Mohammedan Arabs.

The Equatorial Region, hot and wet throughout the year, is forested but passes into savannas at higher elevations.

Useful trees include mahogany and the shea-butter tree. The nuts from a species of palm yield vegetable ivory, and true ivory is got from the tusks of elephants and other animals. Gum arabic, used in the manufacture of confectionery and stationery, is obtained by tapping certain types of acacias growing in the southern forests and savannas. The people, once the prey of Arab slave-dealers, but now free to live a life suited to their environment, devote their energies to hunting and cattle-keeping, while those near the rivers are also fishers. Owing to its distance from the seaboard, and to its scanty and backward population, the development of the Southern Sudan must, of necessity, be slow.

The Savannas of the true Sudan have a hot wet season and a somewhat cooler dry season. In the cooler north the people keep vast herds of cattle and sheep. These furnish hides and wool, though some cattle are bred for beef and exported to Egypt, either through Port Sudan and thence by the Red Sea, or by river and rail. Millet, a cereal which can be grown in districts too dry for wheat, is the staple food crop. Ground-nuts, which also do well in hot dry regions, are cultivated as a cash crop for export.

But for crops that require plenty of water, irrigation is essential, mainly because of the seasonal nature of the rainfall, and partly because it is occasionally unreliable. The area available for such crops is, therefore, limited to land within reach of the Nile or its tributaries. Chief among them is cotton, the principal cash crop, whose value exceeds that of all other exports combined. It is grown on irrigated lands round Kassala, but by far the most important producing area is the *Gezira*, the district lying between the White Nile and the Blue Nile. The building of the Makwar Dam, near Sennar, on the Blue Nile, enabled the Government, in 1925, to put into operation a vast irrigation project by which an area little better than a desert has been converted into cultivated land planted with thousands of acres

of cotton. At the present time a district as large as Oxfordshire is covered by a network of canals whose total length exceeds 10,000 miles. The larger channels were constructed by the Government, but the smaller canals and roads, and the factories where the cotton is ginned, were the work of a British Company. The Company, which has the general supervision of this cotton-growing area, deals with the business side and the marketing of the crop. But the actual cultivation is done by tenant farmers who have a direct interest in the production of the cotton—an interesting example of co-operation. The bulk of the crop is exported, through Port Sudan, on the Red Sea, whence much finds its way to Lancashire.

In the *Scrub and Desert Region* north of the grasslands, crops include dates, grown in the oases, and millet used both for human consumption and for feeding cattle and poultry. Camels, even more important than cattle, are bred both for export and transport. Unlike the oasis-folk, the Arab herdsmen are nomads, dwelling in tents, and following seasonal routes. To them the herding and breeding of animals is a congenial as well as a suitable occupation, and one that produces a brave and hardy type of men. Their wants are simple, their virtues many, and they lead a patriarchal life under their Nazirs, or headmen, whose authority is recognized by the Government.

Gold is mined in the Red Sea Hills; and near Port Sudan are salt-pans, which supply the needs of the country and provide a surplus for export.

Communications and Transport. The capital and seat of the Government is *Khartoum*, which stands at the point where the Blue Nile enters the main stream. A few miles below, on the opposite bank of the White Nile, is *Omdurman*, the old Dervish capital and largest town in the country. The Nile is the chief highway, but trade is also conducted by camel caravan, and the railways carry a considerable volume of traffic. From *Wadi Halfa*, the rail-head on the

Egyptian frontier, the line passes through *Berber* and *Athara* (the junction for Kassala and Port Sudan) to Khartoum. It then runs up the Blue Nile Valley to *Makwar*, whence it turns west for El Obeid, on the edge of the Sahara. *Port Sudan* on the Red Sea has replaced the older port of Suakin, whose harbour is of little use owing to the growth of a coral reef. Liners of the *British Overseas Airways*, on the London to Durban route, call at Wadi Halfa and Khartoum.

Egypt

The history of Egypt goes back for thousands of years; yet at the southern entrance to this land the first thing of surpassing interest is not some ancient temple or tomb, but the great dam at Aswan, $1\frac{1}{4}$ miles long, which enables flood-water to be stored for irrigating Upper Egypt, as the valley-region above the Delta is called. This wonderful engineering feat brings home to the observer, as perhaps nothing else could do, the truth of the saying, 'The Nile is Egypt and Egypt is the Nile'. It makes him realize that, but for the life-giving waters of the great river, the rainless land of Egypt, if it existed at all, would be merely part of the Sahara. Owing to the warm climate plant growth is possible throughout the year, and it is water-supply rather than temperature that controls crop production. Hence, though Egypt is more than four times the size of the British Isles, the settled and cultivated portion, confined to the irrigated lands of the Valley and the Delta, has an area scarcely twice that of Wales. Yet in this restricted region live fourteen million people, with a density of over 1,000 to the square mile.

When, about the middle of September, the flood-waters begin to rise at Aswan, the sluices in the dam are opened, as otherwise their sediment would silt up the basin above. But as the floods subside the sluices are closed and the water rises above the dam, where it is stored for use in the

canals of Upper Egypt during the low-water season. By means of canals, banked up so that they flow at a somewhat higher level than the surrounding land, the water is conducted to the fields as needed.

Dams for irrigation purposes were first constructed in the earlier part of the nineteenth century when the British came to Egypt. The dam at Aswan is the greatest on the Nile. The first one was built a little below Cairo, to store water for irrigating the delta. There are also dams or barrages at such places as Asyut, Esna, and Girga, and others are under construction. By holding up the flood-waters behind the dams until they are required, the fields can be irrigated and planted not only during the *flood season* and the succeeding cool *winter season*, but also in the hot *summer season*, when warmth-loving crops like cotton, rice, and sugar-cane, are grown. Of these, cotton supplies 80 per cent. of the total exports of Egypt, the greater part being sent to Lancashire where it is much in demand on account of its excellent quality.

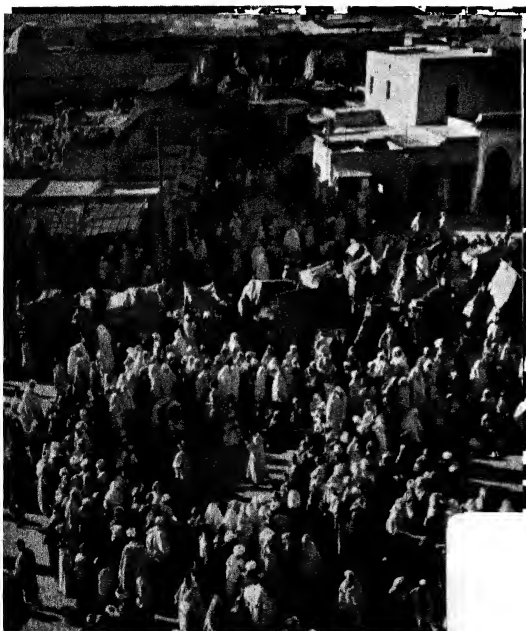
One of the disadvantages of *perennial irrigation*, as it is called, is that the dams hold back much of the fertilizing Nile silt, which was formerly spread over the land during the flood season, when the river is from 30 to 50 feet above its low-water level.

Irrigation has, of course, been carried out in Egypt from time immemorial. The older *basin method* is still widely used, especially in Upper Egypt *above* the Aswan dam. When the floods begin to rise, the water is admitted through canals to embanked fields where it remains for two months or so, until the soil is thoroughly moistened and covered with thick silt. After the waters subside the crops are sown in the wet soil. In the higher fields from which the waters drain off first, the time before the cool winter season is long enough to allow quickly growing crops, like millet and maize, to ripen. More usual, however, are winter wheat and barley—both of which ripen towards the end of April—

pulses, lentils, and fodder crops such as clover. The last-named provides food for horses, donkeys, mules, and for water-buffaloes used for ploughing the fields in Lower Egypt (the Delta). When the crops have been harvested the land is left fallow, becoming dry and cracked until the next flood season. The cultivated lands extend for several miles on each side of the Nile, and then cease quite suddenly towards the edge of the valley, beyond which spreads the desert.

In some districts in Upper Egypt, notably on sugar plantations owned by companies, water is raised from the canals by powerful pumps. But these are expensive to install, and the *fellahin* (peasants) employ more primitive and less costly methods for irrigating their plots. Here, for instance, a water-buffalo walks round and round turning a creaking water-wheel. And there the *fellahin* are working *shadufs*, which, like their wooden ploughs, differ little from those used in the time of the Pharaohs. As will be seen from the picture (Plate 2) the *shaduf* consists of a long tapering pole, to the thinner end of which an earthenware jar is fastened, and to the thicker end a heavy weight. The jar is dipped into the water and raised by means of the counterweight. This is laborious work, but so skilled are the peasants that each operation is completed in little more than a second.

Most Egyptians depend on agriculture for their livelihood. But, owing to the dense population, the farms are of necessity small. Few exceed an acre in extent, and the produce of each has to support an entire family. Hence many of the *fellahin* are poverty-stricken. The majority live in river-side villages, set amidst lofty palms, the flat-roofed houses being grouped around a mosque, or, if the people are Copts (Egyptian Christians), around a church. The grey motor omnibuses that link each village with its neighbour present a strange contrast to the laden camels, donkeys, and mules, pacing along the roads. So do the



3. ALEXANDRIA AND MARRAKESH (MOROCCO)

The aerial view (above) gives a splendid idea of Alexandria, Egypt's chief port (see p. 55). Below is seen Marrakesh, the great caravan centre in Morocco. Note the flowing dress of the Arabs, the market booths, and the awnings in front of the flat-roofed, white-walled buildings. The dome of the mosque, seen in the left background, reminds us that these people are adherents of Islam (see pp. 5 and 34).



4. WEST AFRICAN SCENES

(Above) A Cocoa farmer's compound in the Gold Coast. Even the youngsters are helping to spread out the beans, which will be left to dry in the sun until they are ready to be bagged for export (see p. 60). (Below) Harvesting ground-nuts in Northern Nigeria. After the plants have been pulled up by their roots they are stacked to dry, and then the pods, containing the nuts, are detached from the stem (see p. 65).

flat-bottomed Nile steamers when compared with the *feluccas*, which rely on the prevailing north and north-east winds to fill their tall white sails as they travel up the Nile, but depend on their oars and the current when returning downstream.

Cairo, the capital, a city with over a million inhabitants, stands at the head of the Delta and so controls routes between Lower and Upper Egypt. It still has an old quarter with picturesque bazaars, ramshackle shops, and a labyrinth of narrow lanes. But this is rapidly being replaced by broad thoroughfares, lined with blocks of business buildings and flats, very like those in a European city. Yet life in the streets still speaks of the Orient. Egyptians, Arabs, negroes, and Europeans throng the narrow pavements and overflow into the carriageways, where taxicabs and cyclists pay little attention to the rule of the road; crowded omnibuses edge their way past tramcars; and the drivers of lumbering country carts, devoid of sides, urge their donkeys forward with shrill cries, and shout to the pedestrians, who press around, to make way.

On the opposite side of the Nile are the Great Pyramids and the Sphinx, the most famous monuments in a land whose past is written in stones, and whose present is characterized by the endeavour of its people to be worthy of their status as an independent nation.

From Cairo railways run up the Nile valley to Aswan, east to Port Said and Suez, and across the Delta to Alexandria.

Through *Alexandria* (682,000), the second city in Egypt, is exported the entire cotton crop, as well as sugar, grain, and rice (Plate 3). Cosmopolitan *Port Said*, at the Mediterranean Sea end of the Suez Canal, the third largest town, has a population of 100,000.

EXERCISES

1. (a) What is the chief cause of the Nile floods? (b) At what time of the year is the Nile highest at (i) Aswan, and (ii) Cairo? (c) What is the approximate difference in level between the flood level and the low-water level of the Nile in Egypt?

2. (a) Name *four* places in Egypt and *one* in the Anglo-Egyptian Sudan where dams or barrages have been built. (b) Name *three* methods of irrigation practised in Egypt, and describe *one* of the more important ones. (c) Name the chief crops grown in Egypt during (i) the flood, (ii) the winter, and (iii) the hot season. (d) Of these crops, which do you consider the most important? Why?

3. Into what three regions would you divide the Anglo-Egyptian Sudan? Write an account of the climate and crops of *one* of them.

4. Name *three* ways in which the life of an Egyptian peasant differs from that of a negro living in the south of the Sudan. Account for the differences.

CHAPTER VII THE GUINEA LANDS

Forests and Savannas

MOST of the lands fronting the Gulf of Guinea are governed by the British and French, though the Spanish and Portuguese each have a colony in this region and there is an independent negro republic—Liberia. The British colonies of Nigeria and the Gold Coast are the most important countries.

From the low plain fringing the Gulf of Guinea the land rises sharply to the plateau, which reaches its greatest height in the Futa Jallon Highlands in the west. Here rise the Niger, the Senegal, and the Gambia. Like other African streams, the rivers descend from the plateau to the lowlands by falls and rapids up to which points most of them are navigable. The Niger, which is the only really great river, follows a roughly semicircular course covering 2,600 miles before it enters the Gulf of Guinea. Ocean steamers of moderate draught can ascend the Niger to Jebba, a little above the point where the Benue enters the main stream. This tributary is itself navigable, during the rainy season, as far as Yola, near the frontier of the Belgian Congo. Above Jebba, the Bussa Rapids prevent navigation for a considerable distance, but beyond them traffic is carried on, on the middle Niger, by means of large steel canoes.

The climate of the Guinea Lands is hot and the range of temperature, as in other tropical regions, small. The coastlands and the windward slopes of the plateau receive rain throughout most of the year; it usually falls during thunder-storms that occur every day between noon and midnight. The plateau—like other savanna regions—has summer rains. From October to January, when the 'heat equator' moves south with the apparent movements of the

Sun, a dry dust-laden east or north-east wind, called the Harmattan, blows from the Sahara towards the savannas. Sometimes in January and February its effect is felt as far south as the coast of the Gulf of Guinea where, owing to its dryness, it provides such welcome relief from the steamy heat of the lowlands that it is known as 'the doctor'.

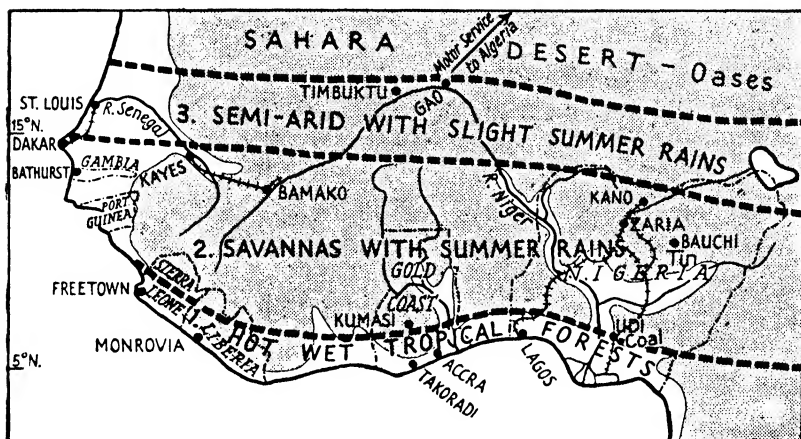


FIG. 14. Tropical West Africa: Natural Regions

We may divide the Guinea Lands into two Natural Regions: (1) the Coast-lands, and (2) the Plateau.

The Coast-lands

Picture a low sandy coast on which the rollers break in clouds of surf; a coast with practically no good natural harbours, fringed in places with unhealthy mangrove swamps, and backed by dense forests whose luxuriant vegetation tells of great heat and constant rain. At nearly all the ports, steamers are obliged to anchor some distance from the shore, and passengers are landed in surf-boats which shoot through the waves until they reach shallow water where the surf breaks upon the sandy strand. Goods, too, must be shipped in this uncertain way, and many tons of merchandise and machinery are consequently lost in the sea.

Names like the Grain Coast (spice grains), the Ivory Coast, the Gold Coast (alluvial gold), and the Slave Coast tell of the former products of this region; but they have little more than an historic interest. To-day the chief importance of the Guinea Lands lies in the fact that they supply tropical products needed by people living in the temperate zone, especially in Europe and North America. Chief among these products are palm-oil, palm-kernels, and cacao. As the oil-palm requires great heat and moisture it is only found within 10° of the Equator. It is indigenous to West Africa, the largest producer of palm-oil in the world, Nigeria alone accounting for more than half the output.

Almost half the world's cacao comes from the Gold Coast, and it is also cultivated in Nigeria and other West African colonies.

Oil-palms. A journey of less than 10 miles from the Nigerian port of Lagos would bring us into the heart of the oil-palm belt, where the trees range from youngsters a few feet high, and six-year-old trees just beginning to bear, to full-grown palms whose feathery tufts rise 50 or 60 feet above the ground. Mature trees yield, as a rule, four or five bunches a year; each bunch bears from 600 to 1,000 fruits, and weighs from 30 to 100 lb. The fruits resemble small plums: the outside is fleshy; inside is a hard nut, and inside the nut again is a relatively small kernel. The outer flesh, when boiled, yields palm-oil, and the kernel the more valuable palm-kernel oil. The Africans use palm-oil in place of butter. Palm-oil, palm-kernels, and palm-kernel oil are exported to Britain, France, and other countries, where they are used in the manufacture of soap and margarine. Palm-oil is also used in tin-plate factories, like those at Swansea, South Wales, for making a film over the sheet-iron before it is coated with tin. Containers for holding preserved foods, petrol, &c., are made from tin-plate.

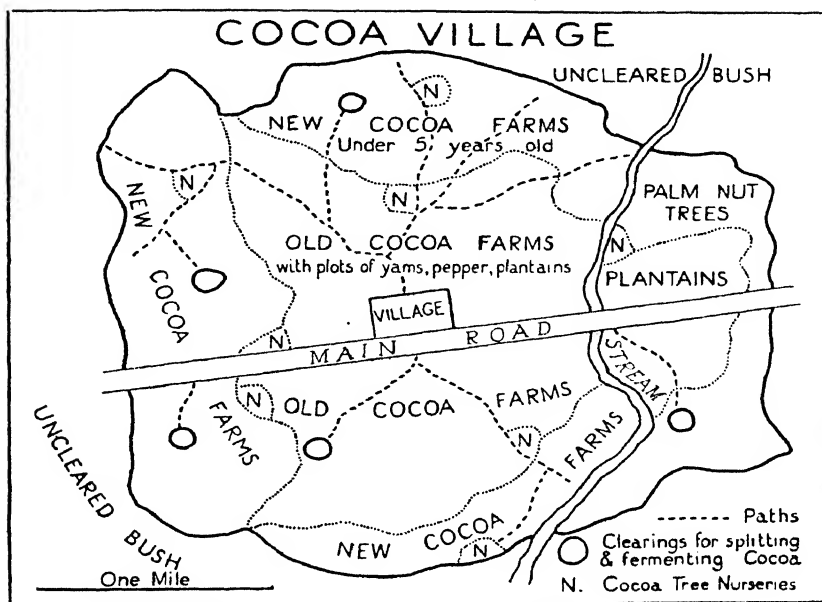
Cacao. The rise of the cacao or cocoa industry in the Gold Coast reads like a romance: in 1878 there was not a

single tree in the country, to-day there are over 180,000,000. Practically all the cacao is grown by native farmers, who have found it so profitable that many have almost given up cultivating food crops. As the trees require great heat and moisture they can only be grown within 20° of the Equator. They are from 20 to 30 feet high, and need protection from the winds: and some of the finest plantations are found on the sheltered slopes of valleys a few hundred feet above sea-level. The flowers spring from 'cushions' on the main trunk and the branches. Flowers as well as young and fully grown pods may be seen on the trees at the same time. Each yellowish pod contains from twenty to forty red beans embedded in a white pulp. The beans are usually dried in the sun (Plate 12), and on some plantations the drying platforms are fitted with sliding roofs which afford cover when it rains. The dried beans are packed in bags. Formerly these bags were carried to the railway on the heads of negro porters: now, however, thanks to the building of roads, they are transported by motor lorries. Great quantities are exported to England, where the beans are manufactured into cocoa and chocolate at Bournville (Birmingham), Bristol, and York.

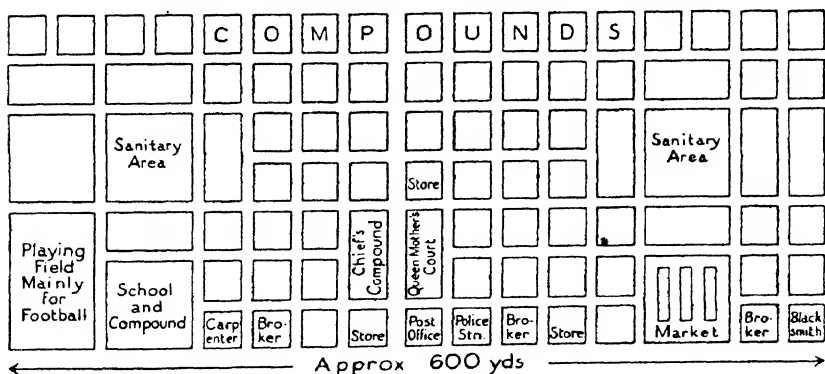
Maize thrives in the coastal belt. In the Gold Coast and Nigeria it is, however, only grown for food, as the farmers find it more profitable to produce cash crops, such as cacao, which command higher prices in world markets. On the other hand, in the French colonies maize is cultivated for export as well as for home consumption.

The Plateau—Mixed Farming and 'Shifting Cultivation'

In the south the Highlands form part of the savanna region of the Sudan. But towards the north, as the rainy season grows shorter, the richer grasslands merge into poorer pastures which, in their turn, pass into the thorn-wood belt margining the Sahara.



TYPICAL MODERN VILLAGE LAYOUT



PLAN
OF
COMPOUND
OF A
COCOA (CACAO) FARMER
AND BROKER

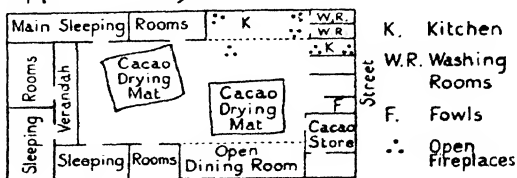


FIG. 15. Plan of a Cocoa Village. (By courtesy of Messrs. Cadbury)

Unlike the people of the forest region, who are unable to keep domestic animals because of the tsetse fly, many of the savanna folk are herdsmen, an occupation well suited to their environment. They graze horned cattle, sheep, and goats, but as they are concerned with numbers rather than quality, the animals are bred mainly for hides. The Fulani (see p. 12), however, are an exception, being skilful cattle-breeders. Poultry are raised both as food and for use in magical rites. Most tribes practise mixed farming, combining stock-rearing with agriculture; growing ground-nuts and cotton as cash crops, and millet as their staple food crop. The millet is made into a kind of porridge, a diet which is supplemented by edible roots, fruit, honey, and wild game, all of which are plentiful in the African bush.

The hoe and the axe are the almost universal agricultural implements among the native peoples of tropical Africa. Land is cleared for cultivation by felling and burning the bush, whose ash, for a time, enriches the soil. But as manure is seldom used, the ground becomes exhausted in three or four years, so that fresh plots have to be cleared. This method of 'shifting cultivation', though wasteful, is practised throughout the wooded areas of Africa. In districts where villages are removed as soon as all suitable land has been cleared, the huts are little more than shelters. But where people dwell in permanent villages, and their garden plots are some distance away, they move out to them, and live in temporary huts from seed-time to harvest (see Plate 2).

British Possessions

Nigeria is about four times the size of Great Britain. With nearly twenty million inhabitants, it has, except for India, a greater population than any other overseas state in the British Empire. The country is divided into the forest region of Southern Nigeria and the higher healthier savannas of Northern Nigeria.

From *Lagos* (130,000), the port-capital, the railway strikes

through the heart of the forest belt to *Ibadan*, a city with 380,000 inhabitants. Unlike the more primitive folk living in the remoter parts of the forests, the people in cities, such as *Ibadan*, are skilled craftsmen. Many weave cotton cloths on hand-looms, while others are dyers, potters, and metal-workers.

At *Jebba* the railway crosses the Niger and enters Northern Nigeria. Travelling north-east across the savannas, we pass by walled towns and villages, surrounded by fields and pasture lands, to *Zaria*. From this town a light railway runs east to the granite Bauchi Plateau, noted for its *tin* mines. Southward from the Bauchi district, another light railway runs through the *coal*-mining centre of Udi, in Southern Nigeria, to Port Harcourt, west of the Niger delta.

From *Zaria* the main line continues to *Kano*, an ancient walled city, and still one of the great trading and caravan centres of the Central Sudan. Along the roads leading to *Kano* moves a constant stream of animals carrying cotton, ground-nuts, hides, and skins. Camels, donkeys, horses, and even oxen pace in close procession, guided by Arab, negro, or Hausa attendants. Some are dressed in brilliant robes and travel astride fine steeds; others wear few clothes; but all carry weapons, not for defence against lawless raiders but for protection from wild animals. The markets of *Kano* are thronged with merchants from far and near. Some have come to buy or sell salt, dates, pottery, leather-work, and carpets; many are traders in cotton and native cotton goods, as well as ground-nuts, for which the city is an important collecting and forwarding centre.

Half a century ago *Kano* was the chief slave-market in the Central Sudan. To-day this is no longer the case: British rule has brought peace to a country once stricken with tribal wars in which the defeated were enslaved by the victors. The people are ruled by chiefs aided by British advisers. Railways and roads have been built; and Public Health and Educational Services established. There are no

large plantations controlled and supervised by Europeans, as in the Belgian Congo, but the Nigerians own and work their farms. In these ways the country is being developed for the good of its inhabitants instead of being exploited mainly for commercial gain.

The Gold Coast, whose area is approximately equal to that of England and Wales, has a population of some three and a half millions. Vast tracts of forest have, of course, been cleared for cacao plantations, but other areas yield mahogany and other hardwoods, as well as kola-nuts from which a powerful drink is made. Apart from the magnificent deep-water harbour at *Takoradi*, which has displaced Sekondi, the chief port is *Accra*, where, however, goods have still to be shipped on board steamers by surf-boats. *Kumasi*, the principal inland town, is linked by rail with the ports. The Volta, the main river, is an important highway. Alluvial gold ranks second to cacao among the exports.

Sierra Leone, much smaller than the Gold Coast, has a population of only about 100,000. *Freetown*, the port-capital, on the finest natural harbour in West Africa, was founded as a home for freed negro slaves. The people grow rice, yams, and bananas as food crops, and oil-palms, ginger, and kola-nuts for export.

Gambia. The colony and protectorate of Gambia lies around the Gambia river from which it takes its name. Unlike the other West African colonies, it lies almost wholly in the savanna belt. From July to October, during the rainy season, there is little traffic on the Gambia river, but from November onwards the broad stream is alive with boats, most of them carrying recently harvested ground-nuts, the chief product of the grasslands. *Ground-nuts* yield a pale yellow oil used in the manufacture of margarine and salad oils. The plant, which is from a foot to 18 inches high, has small oval leaves, set in pairs, and bright yellow flowers resembling those of broom. As the petals fall away, the pods, at the bottom of the stem, embed themselves in

the ground where they ripen. At harvest time the withered plants are pulled up by their roots and stacked to dry. Each pod contains two reddish nuts; these are stripped from the stems, bagged and 'headed' to some nearby village, from which they are dispatched for export to *Bathurst*, the port-capital, on an island in the Gambia estuary (Plate 4).

French Possessions

Most of the *Senegal*, which like Gambia takes its name from a river, lies in the savanna belt. Rice and maize are the chief food crops. St. Louis, the capital, at the mouth of the Senegal, is connected by rail with the superior port of Dakar. From the latter town, an airport on the France-South American route, a railway runs to Kayes on the Upper Senegal, and thence to Bamako, on the Niger. Small steamers can ascend the Senegal as far as Kayes during the rainy season. The *Ivory Coast* exports cacao, palm-oil, and kernels. The former German colony of the Cameroons and French Congo is now included in *French Equatorial Africa*, a region as yet little developed.

EXERCISES

1. Draw a sketch-map of West Africa. On it shade the high land. Mark and name the Niger and its chief tributary, and the Senegal and the Gambia rivers. Indicate and name the chief Natural Regions. Print *Forests* and *Savannas* over the appropriate areas.

2. (a) What do you mean by a *cash crop*? Name two of the chief cash crops grown in West Africa, and in each case name *one* important area of production. (b) For *one* of these products describe the conditions under which it is cultivated.

3. *Either* describe (a) a voyage from Bathurst to Port Harcourt calling only at British ports; *or* (b) a journey made by a Frenchman by river and rail from Dakar to Timbuktu.

4. Write an account of Northern Nigeria under the following headings: (a) relief and climate; (b) chief products and occupations of the people; (c) chief towns; and (d) routes from the coast.

CHAPTER VIII

THE CONGO BASIN

The Ever-growing Forests

THE greater part of this basin lies within the Belgian Congo, a state whose area is almost eighty times that of Belgium itself. The Congo Basin is a circular, plain-like table-land, 1,500 feet above the sea, surrounded on all sides by the edges of higher plateaux. The configuration of this cup-like depression, and the sandstone and other sedimentary rocks which cover most of the older strata, show that the basin was once probably occupied by an inland sea.

From its source, south of Lake Tanganyika, the Congo flows south through Lake Bangweulu and thence northward through Lake Mweru. After receiving the Lukuga, the outlet for Lake Tanganyika during exceptionally rainy seasons, the river leaves the higher part of the plateau by a series of rapids. Continuing northward, it crosses the Equator at Stanley Falls where it descends to the lower portion of its basin. Flowing west, and then south-west, it again crosses the Equator, shortly afterwards receiving the Ubangi, on the right bank, and farther downstream the Kasai, on the left bank. After leaving Stanley Pool the river, which drains more than a million square miles, descends to its estuary over a series of rapids that extend for some 200 miles. As the Congo Basin lies in the equatorial wet belt, the main stream carries to the Atlantic more water than all other African rivers combined.

Owing to the heat and heavy rainfall the whole basin—except more elevated and cooler regions such as the Katanga Highlands—is clad with evergreen forests, where an immense number of different species of trees, festooned with vines and creepers, and ranging from palms to woody mahoganies, rise in tiers from the impenetrable under-

growth. But owing, in part, to its greater elevation, and, in part, to the porous nature of the prevailing sandstone rock, the Congo Basin is not covered with such dense forest as that of the Amazon; and consequently is not quite so thinly peopled. In the higher areas within the forest belt itself, and on the surrounding plateau, the thick vegetation gives way to lighter woodlands and savannas. But in the lower glades the oppressive gloom never varies, for the leafy canopy above shuts out the light of a sun too often hidden by black clouds, which discharge their moisture during violent thunderstorms.

Life and Work in the Forests

In spite of the coming of the white man, who has made clearings in the forest for plantations, mines, and towns, and has cut roads and built railways, vast areas in the Congo Basin are undeveloped and considerable portions unexplored.

Primitive people, like the pygmies who have taken refuge in the less accessible parts of the forest, live by hunting, and collecting roots, fruit, honey, and birds' eggs. Other native tribes rely mainly on hunting and fishing. But the more advanced peoples practise *shifting cultivation*, burning the trees to clear and enrich the ground, which they furrow with their hoes. In their garden-plots they grow food crops, such as yams, bananas, manioc, maize, and rice, as well as coarse tobacco, and sometimes cotton. Most of them live beside the rivers in semi-permanent villages, building the framework of their huts of bamboos and other light timber and thatching them with palm leaves.

Except in the Katanga and similar highland areas the people cannot keep cattle or other stock, owing to the tsetse fly, whose bite is fatal to domestic animals, and usually to human beings, for it carries the germs of the deadly sleeping-sickness.

Some of the Bantus work on plantations and in mines.

Some live in the towns, but the majority prefer to lead simpler lives in their villages. At times, when clearing a piece of virgin forest for a new plantation, or when out on one of their long fishing expeditions, the natives work really hard, but as a rule their lives are leisurely and their work casual rather than constant. When their own simple needs are supplied they see no reason for exerting themselves, and prefer the easier tasks of collecting wild rubber and palm-nuts when they please to regular toil on the plantations, or in the copper and gold mines; or to felling timber.

Owing to the hot, damp climate, the white man cannot perform manual work, and native labour is essential. As there are on an average only twelve persons to the square mile, labour is scarce, and this, together with difficulties of transport, and the dislike of the indigenous population to steady work of any kind, makes the development of the Congo Basin difficult.

In the case of lumbering further difficulties occur. The forests contain mahogany and other valuable hardwoods, but such trees are widely scattered amidst relatively useless timber, and it is not worth while to fell them unless they are close to a navigable waterway. Even then their buttress-like roots prevent them from being cut below 8 or more feet from the ground, and before felling begins a platform must be erected. And then when a tree has been cut through it may, in spite of its weight, fail to fall, so closely is it surrounded and interlocked by other trees and vegetation. When this has been cleared away and at last the giant crashes to the ground, it sometimes becomes embedded in the swampy earth and must be dug out, and left lying until a passage has been cut to the nearest waterway. Thus despite the obvious advantages of the Congo Basin, with its 6,000 miles of streams suitable for floating timber, very little hardwood timber is felled, except for local use in towns, mines, and plantations.

On the plantations, controlled by companies and managed

by white overseers, cotton, coffee, sugar-cane, and cacao are grown. A relatively small amount of rubber is now obtained from the Congo Basin.

The wealth of this region at the present time lies chiefly in its gold, copper, tin, and diamond mines. Most of the

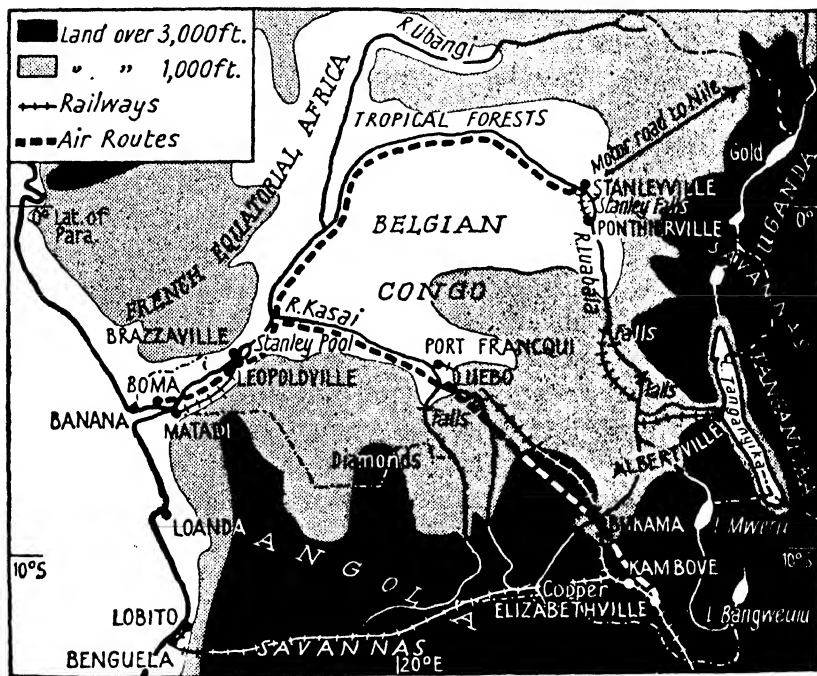


FIG. 16. The Congo Basin

gold comes from the Kilo-Moto mines in the north-east, not far from the frontier of Uganda. The chief copper-producing area is the High Katanga District in the south-east, where the Belgian Congo adjoins the British territory of Northern Rhodesia. From *Elizabethville* and *Kambove*, the principal centres, copper is dispatched by a railway running through the Portuguese territory of Angola, to Lobito, on the Atlantic. From Elizabethville trains, with dining- and sleeping-cars, run through the Rhodesias to Capetown

in five days. By this route coal, fruit, and other foodstuffs are sent northward from Northern and Southern Rhodesia to the Katanga District.

Communications

The Congo and its tributaries are the main highways of this vast region, but, as on other African rivers, navigation is interrupted by the rapids. Ocean-going steamers can travel up the estuary, past Banana, at its mouth, and Boma to *Matadi*, nearly a hundred miles from the Atlantic. Above this town the railway built to avoid the rapids runs for 226 miles to *Leopoldville*, the capital of the Belgian Congo, which stands on Stanley Pool. On the opposite side of this lake is *Brazzaville*, one of the chief towns in French Equatorial Africa. From Matadi to Leopoldville oil is pumped through a pipe-line for use in river steamers. Powerful tug-boats hauling four to eight barges of 800 tons each may be seen travelling along the 1,000-mile stretch of navigable waterway between Leopoldville and Stanleyville, at the base of Stanley Falls. A railway runs from Stanleyville to Ponthierville, above the Falls. The Congo, now known as the Lualaba, is again navigable in two stretches—separated by rapids, but linked by railways—as far as Bukama. This town, at the head of navigation, stands on the line from Elizabethville and the Katanga District to Port Francqui, on the Kasai. Bukama is connected by rail with Lobito Bay and Capetown.

In the whole of the Belgian Congo there are only 3,000 miles of railways, and 42,000 miles of roads some of which, like the highway from Stanleyville to Rejaf, on the Nile, are suitable for motor traffic at all seasons. But in proportion to its size the road mileage of this state is small. Over vast areas there are no roads or railways, and though rivers are used wherever possible, even this means of transport is not always available. Moreover, owing to the tsetse fly animals cannot be used for carrying goods. In many dis-

tricts baggage is conveyed by negro porters who carry on their heads loads of from 50 to 60 lbs. This expensive form of transport provides but another example of the difficulties encountered in developing the Congo Basin and similar regions in tropical Africa (see Plate 6).

In recent years air transport has made rapid strides. It is now possible to travel in five days from Elizabethville (via

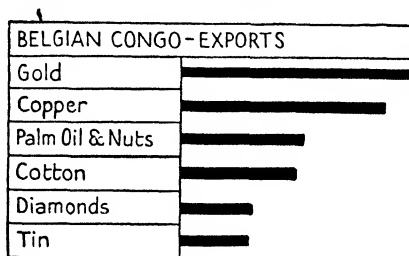


FIG. 17

Leopoldville) to Brussels, a distance of nearly 6,400 miles. Internal services, such as that from Boma and Leopoldville to Stanleyville, link the more important towns in the Belgian Congo, and there are connexions with South Africa and British East Africa.

EXERCISES

1. (a) Describe the occupations of the people living in the Congo Basin. (b) Give *two* reasons which account for the fact that the Congo Basin is more densely peopled than that of the Amazon.
2. Give an account of the various methods of transport employed in the Congo Basin.
3. (a) Name *three* plantation crops grown in the Congo Basin, and describe the conditions under which *one* is cultivated. (b) Name *four* minerals mined in this area. In the case of *one* only, describe the route by which it is dispatched to the port of export.

CHAPTER IX

AN OCEAN HIGHWAY: ABYSSINIA AND THE HORN OF AFRICA

The Way to East Africa, India, and the Far East

DOWN-CHANNEL from Southampton a vessel outward bound for East Africa crosses the Bay of Biscay, and after passing Cape Finisterre keeps well out to sea until Cape St. Vincent is sighted. Then setting a south-easterly course she makes for the Strait of Gibraltar, that strip of water only 9 miles wide which separates Europe from Africa.

Gibraltar, the 'key' to the Mediterranean, is the first British naval and fuelling station on the sea-route to India and the Far East. There mails are left, passengers land or embark, and the vessel sets off again on the 1,000-mile stretch to Malta. The ship drops anchor in the quaint old harbour of Valetta, the island's capital, but after a brief stay continues her journey.

Port Said is 940 miles distant, and here the vessel enters the *Suez Canal*. Though the canal is in Egyptian territory, it belongs to a company in which the majority of the shares are held by the British Government, who are responsible for its defence. Its importance to Britain as a vital link in her communications with India, the Far East, and Australia may be gauged from the fact that three out of every five ships and somewhat more than half the total tonnage passing through the canal are British. The canal is also much used by Dutch vessels travelling between Holland and the Dutch possessions in the East Indies, by Italian ships proceeding to and from Italian East Africa, and by French steamers. Though it cost only a quarter as much as the Panama Canal to build, the dues are as high, and many tramp steamers, plying between Europe, India, and Australia, sail by the 'Cape Route' to avoid the heavy tolls levied on shipping.

On the breakwater at Port Said stands the statue of Ferdinand de Lesseps, the famous French engineer, to whose skill this canal, linking the Mediterranean with the Red Sea, owes its existence. Begun in 1859 it was completed ten years later. It shortens the distance from England to India by over 4,000 miles, to Australia by 1,200 miles, and to East African ports by some 2,000 miles.

Her dues paid, the ship steams through the canal which for 103 miles traverses the desert. Though there are no locks, progress is slow, for otherwise the wash would damage the banks; the passage to Suez takes about 16 hours.

The Red Sea journey is always unpleasant, and the intense heat and damp air at times make it almost unbearable. This long narrow trough, which runs southward for 1,200 miles, is from 100 to 250 miles wide. On both the Arabian and African sides, steep escarpments rise from barren rocky shores. There are few ports along the inhospitable coasts. From Port Sudan, the outlet for the Anglo-Egyptian Sudan, boats crowded with Mohammedan pilgrims sail to Jidda. Southwards, on the African shore, is Massawa, the chief port of the Italian colony of Eritrea.

So through the narrow strait of Bab-el-Mandeb the vessel enters the Gulf of Aden, the arm of the Indian Ocean which stretches between the south coast of Arabia and the great projection known as 'the Horn of Africa'. French and British Somaliland lie to the west and south: the British colony and protectorate of Aden stretches along the Asiatic shore. *Aden* itself, on a magnificent harbour almost midway between Port Said and Bombay, is an important fuelling station, port of call and *entrepôt* port, collecting and forwarding produce from Southern Arabia, British Somaliland, and the surrounding area.

Abyssinia and the Horn of Africa

This part of Africa may be divided into two well-defined regions:

(1) *The Coastal Lowlands*, hot and dry at all seasons, consist of poor savannas, scrub, and desert. There are no permanent rivers, but in districts where sufficient water can be obtained for irrigation a little rice and cotton are grown. The Somalis and other tribes are nomads, who are ever

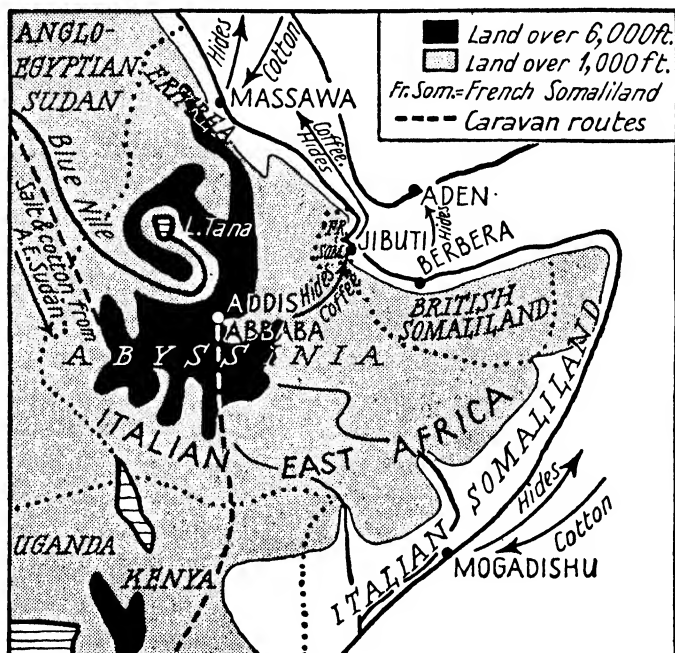


FIG. 18. Abyssinia and the Horn of Africa

wandering in search of fresh pasture and water for their camels, sheep, goats, and cattle. Their exports are of no great value, but their wants are small. Livestock and hides are shipped to Aden from Berbera, the capital of *British Somaliland*, whose few imports consist of rice from India, dates from Basra, and cotton cloths from Lancashire or Japan. Jibuti, the port-capital of *French Somaliland*, is the terminus of the railway from Addis Ababa.

(2) *The Abyssinian Highlands* are a high plateau cut into blocks by canyons, like those through which the Blue Nile,

flowing out of Lake Tana, the Atbara, and the Sobat cut their way north-west to the White Nile. During the heavy summer rains these shallow streams roll down in turgid floods, carrying those life-giving waters upon which the prosperity of Egypt depends.

Some of the precipitous canyons are nearly a mile deep and from 10 to 15 miles from edge to edge. They are formidable obstacles, and travellers often take days to negotiate them. In descending these huge chasms one passes from a temperate to a tropical climate, and from wooded grasslands to unhealthy forests which, however, contain valuable trees including rubber. In the south and west of Abyssinia wild coffee-trees grow to a height of about 30 feet, but in areas where they are cultivated the trees are pruned back to 8 or 9 feet. Cotton, sugar-cane, and date-palms thrive at suitable elevations, but are not yet extensively raised.

The majority of the people live in the Highlands, where they graze thousands of cattle, sheep, and goats, and rear ponies and mules—the chief transport animals—on the rolling grasslands. Most of them till enough ground to supply their own needs. Millet is the principal crop, but maize and barley are also cultivated. Farming methods are crude. The ground is scarcely scratched with the rough wooden ploughs, drawn by a yoke of bulls or oxen, and after harvest the fields are left fallow for some years. The crops must be continually guarded against birds and animals, notably baboons, who delight in raiding them.

Almost isolated from the outside world by mountain barriers, the Abyssinians for centuries followed the traditions of their ancestors; and though adapting their mode of life to their environment did relatively little to improve it. The natural obstacles of a terrain riven with canyons hindered communication, and by favouring the rise of feudal chiefs prevented the establishment of a strong central government. Thus during the war of 1935-6 the Abyssinians, disunited, ill-armed, and ill-prepared, fell easy

victims to Italian forces, equipped with all the latest devices of modern warfare. It was from their colony of Eritrea that the invaders made their chief advance into Abyssinia, which resulted in its conquest and incorporation, with Eritrea and Italian Somaliland, in *Italian East Africa*.

Formerly most roads in Abyssinia were little more than tracks, and internal trade was carried on by means of porters, pack-horses, pack-mules, and, in some areas, by camel caravans. But the Italians are building motor-roads, for strategic purposes and to develop the agricultural resources and mineral wealth of the country, which geologists say is great.

Nearly all the people live in villages scattered over the more fertile parts of the plateau. Their huts, constructed of materials nearest to hand, are made by covering a framework of poles with wattle and daub. They have no chimneys, but holes in the conical roofs allow the smoke to escape from the wood-fires beneath. Even in the towns the houses consist mainly of wattle and thatched huts, though some are roofed with corrugated iron. *Addis Ababa*, the capital (population 150,000), stands in undulating country, at a height of 8,000 feet above sea-level. It is surrounded by eucalyptus trees, which, because of their fast-growing properties, were imported from Australia to replace indigenous acacias and junipers that had been felled by the populace for fuel. In addition to the railway to Jibuti, in French Somaliland, a number of motor-roads radiate from Addis Ababa, including one to *Asmara*, the capital of Eritrea.

EXERCISES

1. (a) Describe the relief of Abyssinia. (b) In what way did it (i) assist, and (ii) hinder the Italian conquest of Abyssinia?
2. Describe the chief occupations of the people of Abyssinia, and show how these are related to their environment.
3. An English official stationed in Berbera has six months' leave which he decides to spend in England. Describe his homeward route.
4. Draw a sketch-map to show why the Suez Canal is such an important channel of communication.

CHAPTER X

BRITISH EAST AFRICA

The East African Colonies

THE Plateau of East Central Africa, which stretches from the Abyssinian Highlands to the Zambezi, is margined by a low coastal plain fronting the Indian Ocean.

This region forms part of a belt of British territory which extends from the Anglo-Egyptian Sudan to the extreme south of Africa. British East Africa consists of the following colonies and protectorates: Kenya and Uganda, the island of Zanzibar and Pemba; Nyasaland; and the former German colony of Tanganyika now ruled by Britain, under a mandate from the League of Nations.

Lowland and Plateau

From the coastal lowlands the land rises by steep escarpments to the Great Central Plateau. Much higher than the corresponding part of the Congo Basin, this table-land has an average elevation of from 4,000 to 9,000 feet, though the extinct volcanic cones of Elgon, Kenya, and Kilimanjaro rise to heights ranging from 14,000 to nearly 20,000 feet. Further diversity is given to its surface by the two rift valleys, converging towards Lake Nyasa, which trench the plateau.

As British East Africa stretches from 5° N. to about 16° S., much of it lies in the equatorial wet belt and receives rain at all seasons, especially during the months following the period when the sun is overhead. Towards the north and south, however, the rains tend to be seasonal, most falling during the summer months. But the climate depends on differences in elevation rather than on latitude. Thus the coastal regions, the relatively low-lying district

around Lake Victoria, and the rift valleys are hot, while on the plateau the height tempers the heat. As in other tropical regions, the range of temperature is small. At Nairobi (5,450 feet) there is a difference of only 7° between the hottest and coolest months, and throughout most of the year it is as warm as it is in the south of England in summer.

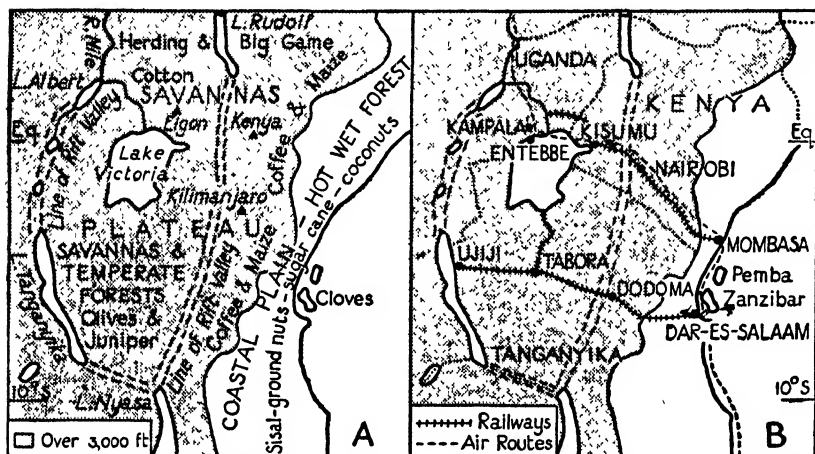
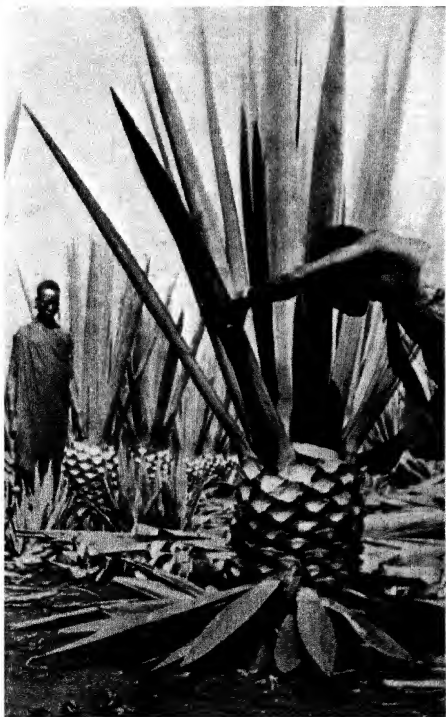


FIG. 19. British East Africa

Cloves and Coconuts

The mangrove swamps along the shore, the coconut palms fringing the sandy strands, and the forests all tell of the hot wet climate of the coastal belt. The forests, which are less luxuriant than those of the Congo Basin, and are interspersed with stretches of scrub, yield ebony and copal, a tree from which gum is obtained. Crops include sugar-cane, rice, maize, bananas, and yams.

Cloves and coconuts are the chief cash crops. The islands of *Zanzibar* and *Pemba*, climatically part of the coast-lands, produce nine-tenths of the world's supply of cloves. The clove-trees, which grow to a height of from 30 to 40 feet, have dark glossy leaves. As the creamy-pink buds must be plucked immediately before they open, there



5. DRYING CLOVES AND CUTTING SISAL

(Above) Drying cloves in Zanzibar (see p. 79). The cloves are spread out thinly on concrete floors, or on mats, in the sun. After about five days they turn from a pink-green colour to the familiar brown. (Below) In this plantation in Tanganyika a man is cutting sisal with his sharp knife. The leaves will be crushed to obtain their fibre, which is made into rope and binder-twine (see p. 79).



6. HARVESTING COTTON AND TRANSPORTING GOODS IN MOZAMBIQUE

(Above) Harvesting cotton in Uganda (see p. 79). (Below) A safari, or hunting expedition, in Mozambique. In many parts of tropical Africa, especially where the tsetse fly makes animal transport impossible, goods are still carried by native porters. The porters can carry from 50 to 100 lb. on their heads for a distance of 50 miles or so.

is only a very short picking season, and much additional labour is required, the clove-pickers being conveyed free between the ports in Government steamers. There are two harvests, the principal one in May, the lesser in November. After they have been sun-dried (Plate 5) the cloves are stored in sheds to await shipment from Pemba and Zanzibar, the chief ports of their respective islands. Coco-nuts are an important food crop. Much copra, as their dried flesh is called, is exported: the bulk is shipped to Mar-seilles and Genoa, but some is utilized locally in the manu-facture of oil and soap.

Farming on the Plateau

Most of the Plateau is a savanna region, though there are extensive warm temperate forests whose trees include junipers, camphors, olives, and cedars, as well as bamboos.

Millet and maize are the staple food crops of the Africans. Maize is also grown on European farms, as, too, is wheat, which thrives at elevations ranging from 7,000 to 9,000 feet. Coffee, sisal, and tobacco are the main cash crops of the white farmers. Coffee, planted on slopes, is important in Kenya; sisal in Tanganyika; and tobacco in Nyasaland.

Sisal, grown on the lower parts of the Plateau and to some extent on the coast-lands, is a plant with long spiny leaves, which thrives on poor sandy soils. After cutting each leaf separately with sharp knives (Plate 5) the natives stack them in piles which are collected and taken to the factories. Here the leaves are crushed to obtain their fibre, which is made into rope and twine. Quantities of twine are exported to grain-growing countries, such as Canada, for use in the binding machines: a ton of sisal will yield enough twine to bind 1,000 acres of wheat.

Cotton is an important cash crop in Kenya, Tanganyika, and especially in Uganda, which alone produces more cotton than any other state in the British Empire, except India.

majority may be divided into two classes, namely, the agricultural and the pastoral.

Except in some districts, such as the low-lying area round Lake Victoria, the plateau is free from tsetse fly, and is suitable for stock raising. The pastoral natives are nomads. Large tracts of land have been set aside as reserves. The Masai Reserve, for example, about twice the size of Wales, is inhabited by some 50,000 Masai, a people once the terror of the country, but now peaceful herdsmen grazing their flocks, and hunting the 'big game' that abounds on the savannas.

A number of the agricultural people, such as the cotton growers of Uganda, have become progressive farmers. Most of them, however, cling to more primitive methods and grow crops, like millet and maize, to supply their own needs. But even these people own animals, as do nearly all African tribes unless they inhabit areas where cattle keeping is impossible. They live in villages, composed of mud huts thatched with grass, whose pattern varies according to the tribe. Each village consists of the head of a family, and his wife or wives, children, and possibly other relatives. Near by live groups of families belonging to the same clan. Thus the village is one close family circle. In this tiny world of mud huts all play their part. The youngster helps his father tend the flocks, or assists him to spread out hunting-nets in the bush into which buck and other small animals are driven. The mother sows and reaps the maize or millet as well as attending to her household duties. The leaders of opinion are the old people, whom the young men and women are taught to look up to and obey.

For centuries the coastal strip was visited by Arab slavers and traders, many of whom settled and made permanent homes here. In this region, as well as in the islands of Zanzibar and Pemba, live Arabs, and people descended from Arabs and their negro wives, who are known as Swahili,¹

¹ Arabic: *sahil*—coast.

or coast folk. In Zanzibar the Arabs are the principal land-owners, but the majority of the people are Africans. There are also some 14,000 Indians through whose hands passes most of the native trade of East Africa.

For centuries people from India settled in East Africa, but most of the present Indian inhabitants came in quite recent times to help in the construction of the railways. To-day, scattered throughout East Africa, there are nearly 100,000 Indians and other Asiatics, the majority being Indians. Many occupy responsible positions on the railways, others are shop-keepers, clerks, and artisans, or work in hotels. These Asiatics have similar rights to Europeans, both as regards ownership of land and citizenship.

The climate has enabled European settlers to make permanent homes on the Plateau, where the majority own or lease farms which they work with African labour. There are, however, only about 32,000 white people in British East Africa, compared with an African population of some 14,000,000.

Communications and Towns

Kenya and Uganda. There is a charm about *Mombasa*, the chief port of Kenya, whose white-walled, red-roofed houses stand out against the vivid green of countless palms. It lies on a small island on the opposite side of which is the modern, deep-water port of *Kilindini*, situated on one of the finest harbours on the coast of East Africa. The *Kenya and Uganda Railway* crosses to the mainland by a long iron bridge, and passing through the forest belt climbs upwards to *Nairobi*, the capital of the Kenya Colony. Thence, after descending to the Eastern Rift Valley, it makes the steep ascent to the plateau, and then drops down to *Kisumu* on Lake Victoria. Oil-burning steamers carry the traveller across the lake to *Entebbe*, the political capital of Uganda, or to *Port Bell*, the port for *Kampala*, the main commercial centre and native capital. In certain parts of Lake Victoria

passengers must cover their heads with veils to protect them against tsetse flies.

Zanzibar and Pemba. There are regular steamer services between the ports of Zanzibar and Pemba, and with the mainland of East Africa and Aden; as well as with Portuguese East Africa, South Africa, and India. A considerable coastal trade is carried on by dhows. Zanzibar and Pemba are separated from Tanganyika by a channel having a minimum width of 22 miles. Zanzibar, with an area of 640 square miles, is the bigger of the two islands, and is also the largest coral island off the coast of Africa. Formerly centres of the slave trade, the islands are now a British protectorate.

Tanganyika. Steamers run southward across Lake Victoria to the port of *Mwanza*, in Tanganyika, whence a branch of the *Central Railway* runs through a cotton-growing district to Tabora, a junction and a caravan centre. From Tabora the line goes through Ujiji, once an Arab market for gold, ivory, and slaves, to the modern port of Kigoma, whence steamers run across Lake Tanganyika to Albertville, in the Belgian Congo. Eastward from Tabora the *Central Railway* goes to Dodoma, a growing town and airport on the *Great North Road* which runs from Northern Rhodesia, through Tanganyika to Kenya. Descending to the coast the railway reaches *Dar-es-Salaam*, the port-capital of Tanganyika.

The *Nyasaland Protectorate* stretches along the southern and western shores of Lake Nyasa and extends almost to the Zambezi. In former days the lake was frequented by the dhows of Arab slavers, but now it is relatively little used for shipping. There is no rail connexion between Tanganyika and Nyasaland, but a motor highway links the Protectorate with the Great North Road. From Salima, at the southern end of Lake Nyasa, the railway runs through *Zomba*, the seat of the Government, to *Blantyre*, named by Livingstone after his birthplace in Scotland. Descending

from the highlands the line runs down the Shiré valley to the Zambezi. It crosses the river by the Lower Zambezi Bridge, somewhat more than 2 miles long, on its way to the port of Beira in Portuguese East Africa, through which are exported the tobacco, tea, coffee, and cotton grown in Nyasaland.

British Overseas Airways liners, on the London to Durban route, call at Port Bell, Mombasa, Dar-es-Salaam, and Beira. Connecting services link Nairobi with Dodoma and the Rhodesias.

EXERCISES

1. Divide British East Africa into two Natural Regions. Describe the climate and crops of *one* of these regions.
2. Compare British East Africa with West Africa under the following headings: Relief; Natural Vegetation and Crops; Settlement.
3. With the aid of your atlas describe a journey by steamer and railway from Stanleyville (Belgian Congo) to Dar-es-Salaam.
4. Examine Plate 6 (top) which shows a cotton plantation in Uganda. (i) What is in the baskets? (ii) Estimate the height of the cotton plants. (iii) To what building will the cotton be taken and what will be done to it there? (iv) How is it packed for export?

CHAPTER XI

NORTHERN AND SOUTHERN RHODESIA

A Great Pioneer and His Vision

NOT far from Bulawayo the Matoppo Hills rise high above the wind-swept surface of the plateau. Here amidst these wide expanses lies a solitary grave—that of Cecil Rhodes, one of the greatest pioneers Africa has seen. It was he who in 1899 obtained a charter for the British South Africa Company. In 1923 Southern Rhodesia, named after him, became a self-governing colony, and a year later the Crown took over the government of Northern Rhodesia. Cecil Rhodes dreamed of a belt of British territories extending from the Cape, through East Africa, to the Mediterranean; and of an all-British railway route from Cape Town to Cairo, the capital of Egypt, which in his time was a British Protectorate. In part his dream came true, for to-day from South Africa northwards to the Anglo-Egyptian Sudan stretches a block of territory all of which forms part of the Empire. It is possible to travel by rail, road, and water from Cape Town to Wadi Halfa, on the southern frontier of Egypt, without leaving British soil. The name of Rhodes, like those of Botha and Smuts—those soldier-statesmen and idealists who have played so great a part in building the Union of South Africa—will always live in the history of the British Commonwealth of Nations.

Wooded Savannas and Forested Valleys

The Zambezi separates Northern from Southern Rhodesia. These countries form a transitional zone between British East Africa and South Africa, and like these adjacent regions consist mainly of high plateaux. The elevation tempers the heat, and their more southerly situation makes the Rhodesias somewhat better suited to white settlement

than British East Africa. Most of the rain falls in summer, the rainy season lengthening towards the north, but there are occasional showers during the cool season. The plateaux are in the savanna belt, which is especially well wooded in the north where extensive areas are covered with dense bush. The valleys are forested, but the lower ones and the delta of the Zambezi are unhealthy and infested with tsetse fly.

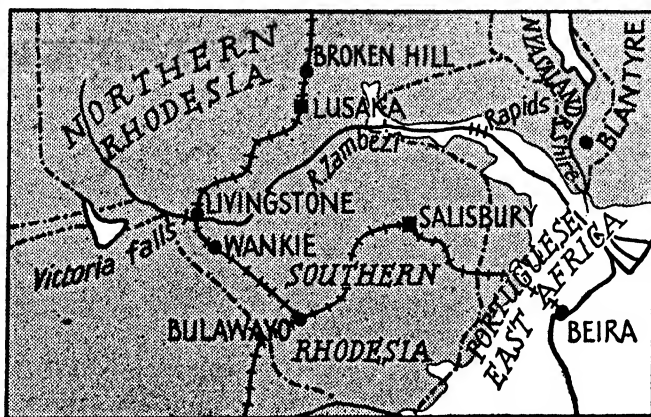


FIG. 20. Rhodesia

Small vessels can ascend the Zambezi for some 400 miles as far as the Kebrabasa Falls. In its middle course the river now divides into many channels as it winds through enormous swamps, and now flows through narrow valleys between wooded hills. But it is navigable for hundreds of miles between rapids where it descends from higher to lower plateaux. At the Victoria Falls the river, a mile wide, tumbles over a precipice more than 400 feet high, into a narrow zigzag gorge some 40 miles in length. The native name for these wonderful falls is *Mosi-oa-Tunya*—‘the smoke that thunders’—and it is this thunder rather than the size of the falls which first impresses the observer.

‘In the Victoria Falls Nature has fashioned her work on such an immense scale that he who would know it must

count his time not in hours but in days. . . . He must gaze down into the gorge that turns at right angles at the foot of the Devil's cataract and see rainbow after rainbow come into being amid the spray of the Falls. . . . And then he may scramble down the path that winds amongst the moss-covered boulders and twisted ferns into the Palm Grove, where from the level of the waters in the gorge he may look up hundreds of feet into the heights above.¹

The power of the Victoria Falls has not, as yet, been harnessed, like that of Niagara, for generating electricity, and the district around preserves its sylvan beauty unspoilt by house, hoarding, or factory.

Northern Rhodesia

Northern Rhodesia, somewhat more than three times the size of the British Isles, is inhabited by 1,300,000 people of Bantu stock, and 10,000 Europeans. Many of the latter live on farms where they graze cattle, and grow maize, wheat, and tobacco as their main crops. In recent years the planters round Abercorn, at the south end of Lake Tanganyika, have started to cultivate coffee. Other white people hold administrative posts in mining camps, or live on Government outposts, or on mission stations. Some reside in townships, such as *Lusaka*, the capital; and the mining centre of Broken Hill. Both of these towns are situated on the railway which enters the colony at Livingstone and runs across it to the High Katanga District of the Belgian Congo.

The homes of the Bantus are villages scattered throughout the bush, whose appearance has altered little with the passing centuries, except that they are no longer surrounded by stockades. Most of the tribes keep cattle, and grow millet and maize, the latter being made into porridge, which is their principal food. Hoe cultivation is the general rule,

¹ *The Times*.

though the peoples living near the railway have begun to use ploughs, and owing to their improved methods of farming have a surplus of maize for sale. Numbers of men work in the great copper mines, such as the Roan Antelope Mine, at Luanshya, where about 4,000 persons are employed. Here they may toil underground, or in the refineries where the copper is turned into ingots which are sent by rail to Lobito (Angola) for shipment to Britain. But after a time the miner usually returns to his village, often several hundreds of miles distant; possibly travelling part of the way by rail, and part by lorry; sometimes cycling, but more often journeying on foot, carrying his possessions on his head.

Southern Rhodesia

Though Southern Rhodesia is little more than half the size of Northern Rhodesia, yet owing to its higher latitude it contains almost as many inhabitants. Its white population—mainly of British stock—which has doubled in the last twenty years and is now about 55,000, is somewhat greater than that of British East Africa and Northern Rhodesia combined.

The savannas are admirably suited for stock rearing and agriculture. Maize, tobacco, and fruits including oranges and lemons are the main crops grown by the white settlers, who also graze beef and dairy cattle, the district round Gwelo being especially noted for dairying. Some of the natives work on the plantations, but numbers live in their kraals on reserves, grazing their flocks and growing maize, beans, and millet.

Mining is important and, as in Northern Rhodesia, the Bantu population provides the manual labour. *Gold*, which supplies 50 per cent. of the value of the exports, is mined round Salisbury, Gwelo, and Bulawayo; coal at Wankie; chrome ore near Gwelo; and asbestos in the Bulawayo district. Considerable quantities of coal, together with

maize, fruit, and cattle, are exported by rail to the High Katanga copper-mining district of the Belgian Congo.

Like its British neighbour north of the Zambezi, Southern Rhodesia has no seaboard. *Salisbury*, the capital of Southern Rhodesia, is linked by rail with Beira in Portuguese East Africa, and with *Bulawayo*, the junction for the line from Cape Town to Northern Rhodesia and the Belgian Congo. Local air lines connect Salisbury and other towns with the British Overseas Airways service which passes through Beira on its way to Durban.

EXERCISES

1. Write an account of Southern Rhodesia under the headings: Position and Size; Climate and Suitability for White Settlement; Products; Towns and Communications.

2. With the aid of your atlas give an account of a railway journey from Beira to Lobito. Describe the natural vegetation and products of the regions through which you pass. Name *eight* important towns (apart from the terminal ports) including *one* at least in each country through which you pass.

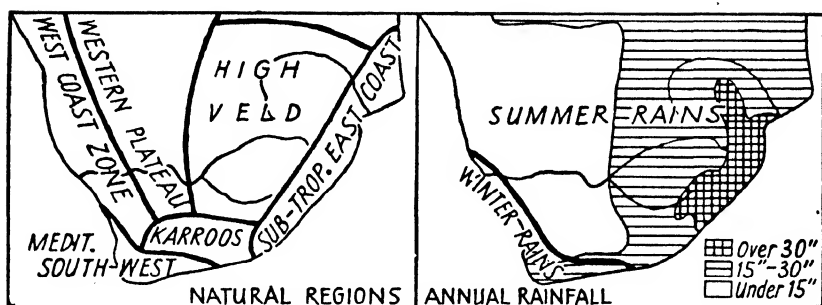


FIG. 21. South Africa: Natural Regions and Rainfall

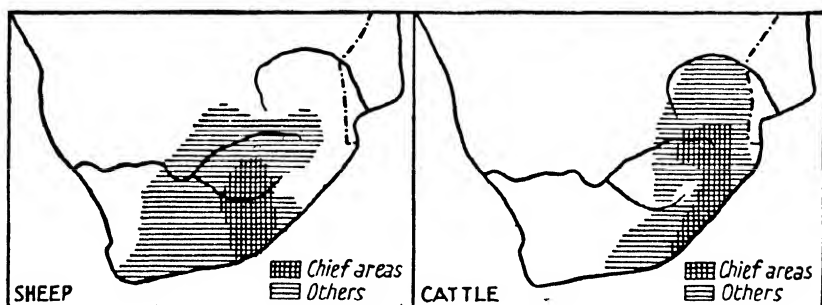


FIG. 22. South Africa: Distribution of Sheep and Cattle

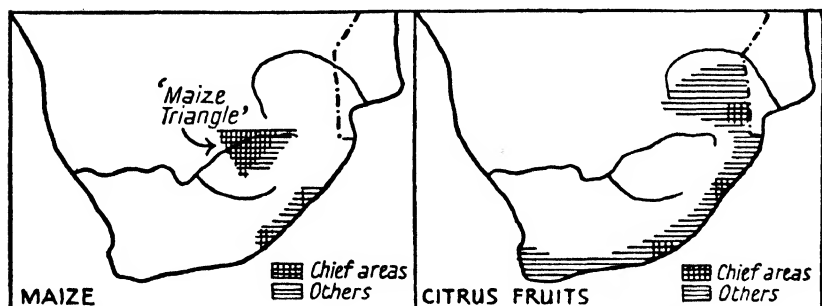


FIG. 23. South Africa: Distribution of Maize and Citrus Fruits

CHAPTER XII

THE UNION OF SOUTH AFRICA

The Union, the Mandated Territory, and the Protectorates

THE Union of South Africa, one of the Dominions of the British Commonwealth, is about four times the size of Great Britain. It consists of the former British colonies of the Cape of Good Hope and Natal, together with the Orange Free State and the Transvaal, both founded by Boer settlers of Dutch extraction. The one-time German colony of South-West Africa is administered by the Union Government, under a mandate from the League of Nations. But the Protectorates of Bechuanaland, north of the Limpopo River, and Basutoland and Swaziland, on the borders of Natal, are at present ruled by the British Government, which exercises its authority over the native peoples mainly through their tribal chiefs.

The Peoples of the Union

Of the 9,500,000 inhabitants of the Union some 6,500,000 are Bantus, and about 2,000,000 are Europeans either of British stock, or Boers, descendants of the original Dutch settlers. The former, of course, speak English; the latter Afrikaans, a variant of the Dutch language. The British, who are most numerous round Cape Town, in Natal, and on the mining district of the Rand, are chiefly concerned with commerce, mining, and finance; the majority of the Boers are farmers. Only men and women of European descent have the right to vote or to become members of Parliament, but the native peoples have their own Representative Council which deals with their affairs. About half the Bantus are pastoral and agricultural people. The

remainder work on farms owned or managed by white people, in the mines, or in towns where they usually obtain jobs as 'unskilled labourers'.

There are also a quarter of a million Asiatics who are chiefly Indians, though some are Malays. The majority of the Indians, most of whom live in Natal, are descendants of coolies who came from India to work on the plantations, where many Indians are still employed.

Of the remaining peoples, about three-quarters of a million are of mixed white and coloured descent. The greater number are found in the south-west of the Cape Province, where they are known as 'coloured people', a term not applied to Bantus or Asiatics.

Relief, Climate, and Natural Vegetation

South Africa consists of a high plateau which rises by steep escarpments from narrow coastal plains. Nearly half of this table-land is over 4,000 feet above sea-level. It is highest in the east, where its edge is formed by the Drakensbergs which front the rolling coast-lands of Natal. On the south the plateau descends to the Great Karroo and then by another escarpment to the Little Karroo, separated by the Langebergen from the coastal belt. On the western slopes of the Drakensbergs rise the Orange river and its tributary the Vaal. The main stream, which flows to the Atlantic in a deep boulder-strewn gorge, is interrupted by falls, and is useless for navigation, though in some districts its waters are used for irrigation. In the north of the plateau the granite ridge known as the Witwatersrand, or more popularly as the Rand, forms the divide between the Vaal and the headwaters of the Limpopo, which follows a semicircular course to the Indian Ocean.

Taken as a whole South Africa is a dry country, and the elevation reduces the temperature. Most of this region lies in the south-east trade wind belt. The wettest part is the

east, where the south-east trades bring heavy rain to the windward slopes of the Drakensbergs and the lowlands at their base. These winds blow most strongly and cause most rain in summer (October to March) when the heated air over the land is rising. The rainfall decreases steadily towards the west. Though the greater part of South Africa receives rains in summer from the

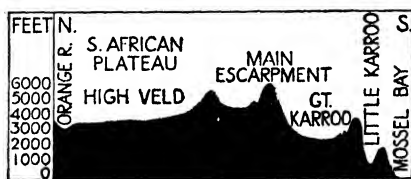


FIG. 24. South Africa: Section North to South

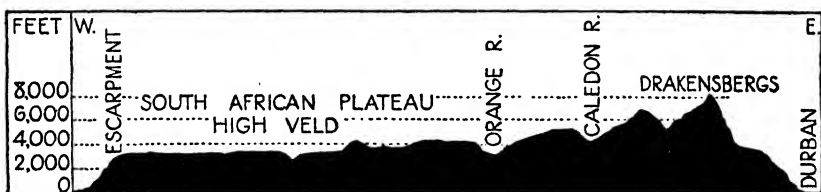


FIG. 25. South Africa: Section East to West

prevailing trade winds, the west side of the plateau and the coast-lands are dry at this season because the winds blow off-shore. The extreme south-west of South Africa has a Mediterranean climate with dry summers and rainy winters.

The High Veld

The High Veld, which forms the eastern part of the plateau, consists of treeless plains and wooded valleys. Its sunny climate makes it one of the healthiest regions in the world. So clear is the air that it is often possible to see for miles over the wide expanses, whose surface is broken only by kopjes, as the flat-topped hills are called, capped by hard layers of the horizontal strata.

Maize, or mealies as it is called, is the chief crop. It is a valuable cattle food, and maize porridge is the staple diet of the Bantu population. The principal producing area is in the wetter east, where the district known as 'The Maize Triangle' furnishes nearly two-thirds of the total output of

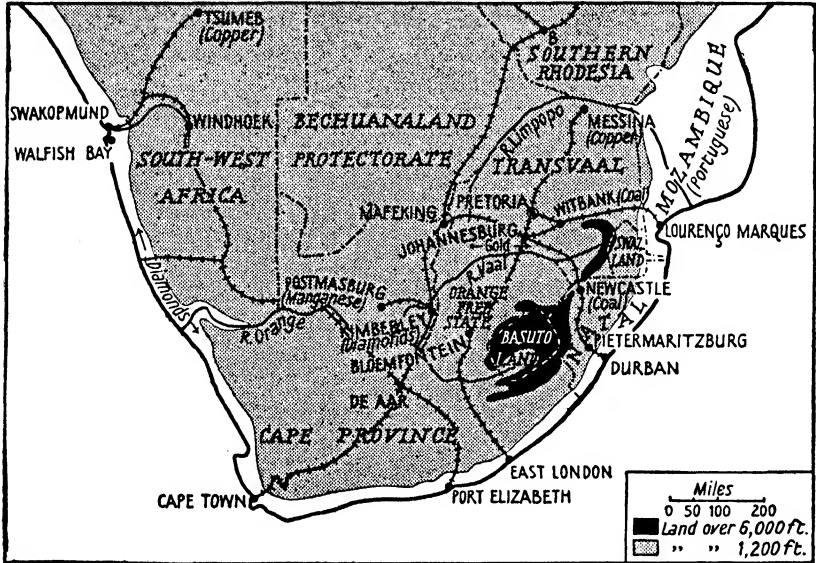


FIG. 26. South Africa: Minerals, Towns, and Railways

the Union (Plate 7). In the Transvaal, tobacco and citrus fruits are grown in irrigated valleys.

But the greater part of the Veld is a pastoral area and its chief wealth lies in its sheep and cattle. In the wetter and warmer north-east cattle are reared both for meat and dairy purposes. In the drier south, where the pasture is poorer, sheep are grazed mainly for their wool, which ranks as the second export of the Union. On the farms oxen, mules, and donkeys are used for ploughing and carting in preference to horses, which are liable to 'horse-sickness'.

Though in most areas the rainfall is light, the great difficulty the farmer has to face, at any rate in the eastern

part of the High Veld, is not so much the lack of rain as its uncertainty, and the fact that it often falls in torrential storms. Sometimes 2 to 3 inches, out of an annual total of from 15 to 20 inches, will fall in the course of a few hours. During such heavy downpours the dried-up watercourses, called *dongas*, are filled to the brim, and even the sheep and cattle tracks are turned into raging streams. Then soon, unless proper steps have been taken, the waters run to waste, carrying away valuable surface soil and leaving behind barren furrows. To prevent the animals from wandering at large and creating unnecessary tracks the farmer fences his land into paddocks. He also builds dams across the *dongas* and furrows so that during downpours the water remains in the channels and the stirred-up soil is ultimately spread over the land instead of being scoured away. Thus in time the furrows are filled up and with care become good pasture land. The water, too, if retained behind dams, rises gradually over the banks of the streams and soaks into the ground, which sucks it up like some gigantic sponge. The careful farmer does not overstock his land. If thin pastures are overstocked, or over-grazed, bald patches appear, soon the grass gives up the unequal struggle, and the ground becomes bare and arid. On the veld, owing to the need of preserving pasture, most of the land carries few animals per acre: so the farms are large, and the farmsteads are sometimes as much as 20 miles apart.

Living more or less isolated from their neighbours, the Boer farmers are extremely self-reliant, and have developed a sturdy and independent outlook.

The Karroos

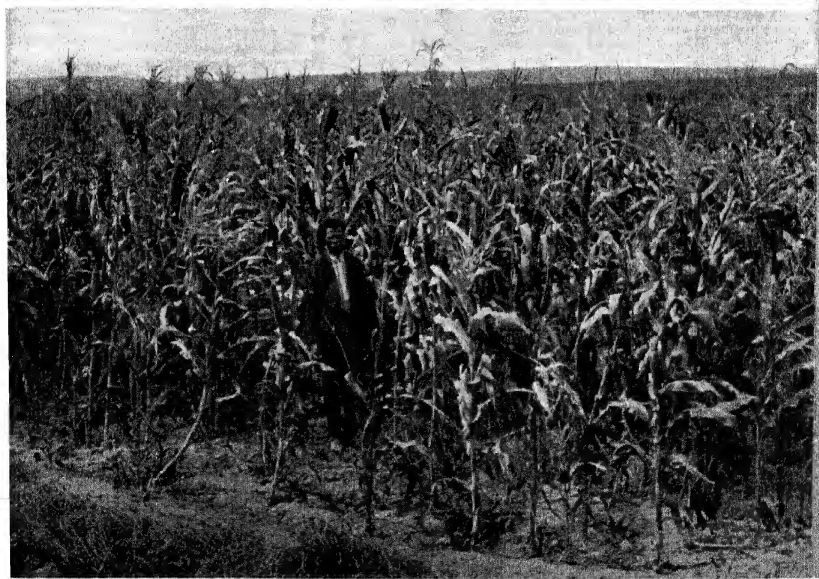
On the south the plateau drops by steep escarpments (see Fig. 24) to the Great and Little Karroo. These dry treeless uplands are strewn with boulders and dotted with sweet-smelling Karroo bush, whose long roots and tough leathery leaves enable it to live when all other forms of plant life

have died through lack of moisture. Millions of sheep and Angora goats are grazed: the former are bred for wool, the latter for mohair, both products being exported through East London. There are still a number of ostrich farms on the Karroos where the birds are reared in paddocks and fed on lucerne (alfalfa), an ideal fodder crop for dry lands as its roots go many feet into the soil in search of moisture and so grow more luxuriantly than other grasses. But ostrich farming, dependent as it is on the whims of fashion, is a declining industry, and many farmers have turned their attention to more useful industries, such as rearing pigs and poultry.

The South-West—Orchards and Vineyards

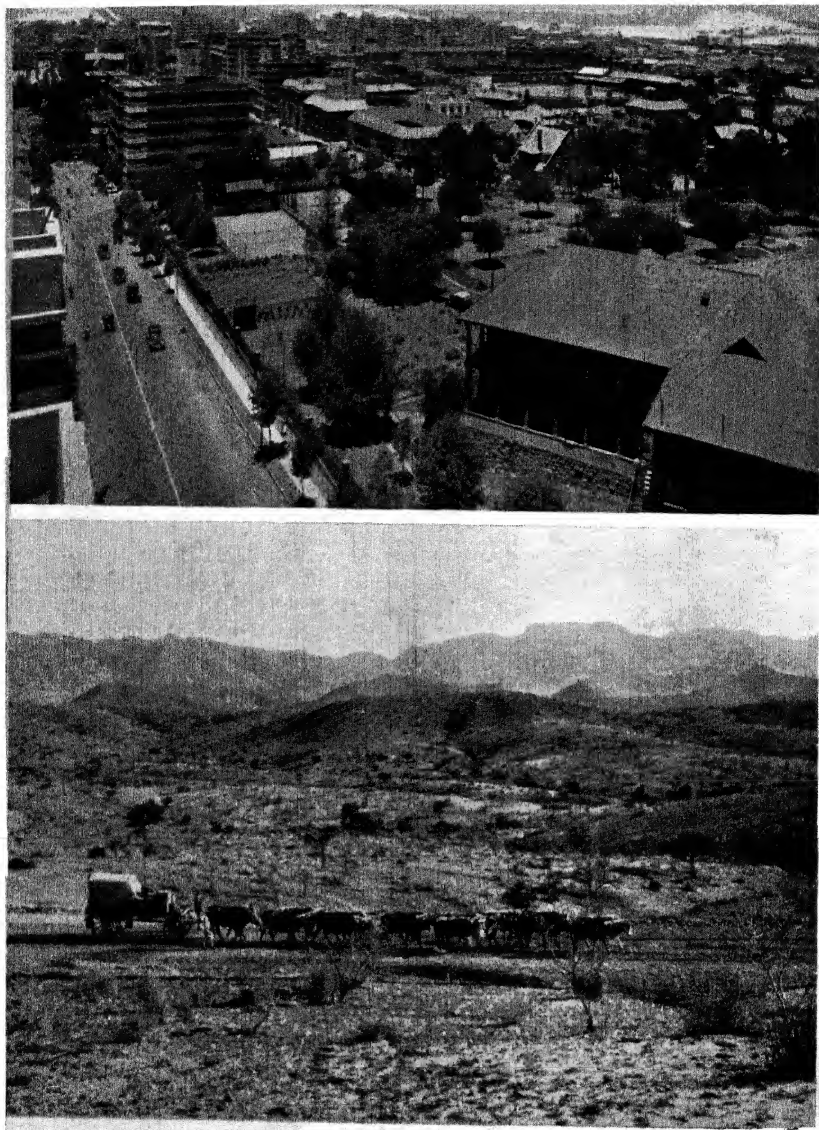
The South-West, with its dry sunny summers and mild showery winters, is the chief fruit and vine-producing region in the Union. Finely engineered roads run up the wooded valleys, past orchards and vineyards, to the great plateau beyond. Many of the farms are owned by people of Dutch or French Huguenot descent, employing 'coloured' labourers who live with their families in cottages each with its own garden plot. Some of the gabled farm-houses, with their white walls and broad *stoeps* (open verandahs), date from the time of the early settlers, though to-day many of the thatched roofs have been replaced by those of corrugated iron.

Work on the farms continues throughout the year. In fact, in December and January so much extra help is needed that European children from the villages and university students often spend their summer holidays helping the 'coloured' workers to pick the fruit. The finest peaches, plums, apricots, and pears are packed in cases which are sent to Cape Town. Here they are put aboard steamers, fitted with refrigerating chambers, which carry them to the British Isles, where the fruit arrives just as supplies from



7. FARMING IN THE UNION OF SOUTH AFRICA

(Above) Sugar plantations in Natal (see p. 97). The canes are planted in rows with sufficient space between each to allow the workers to fell them. The rolling country is typical of that lying between the Drakensbergs and the coastal belt. (Below) Another plantation in the Union (see p. 106) where the crop is ready for harvesting.



8. THE UNION OF SOUTH AFRICA—SCENES IN TOWN AND COUNTRY

(Above) Johannesburg (see p. 101). The well-planned city in the foreground presents a striking contrast to the dumps of cyanide waste from the mines, which are seen in the background. Yet these dumps are reminders that Johannesburg is the chief gold-mining centre in the world. (Below) A farmer on the Veld taking his produce to market in a wagon drawn by eight yoke of oxen, animals which are widely used both for transport and draught purposes (see p. 94).

the northern hemisphere are beginning to fail. Towards the end of February or the beginning of March the grapes are gathered. Some of the best ones are sold for table use; some are sun-dried for raisins; some distilled for brandy; but the bulk are pressed for wine. As soon as the grape harvest is over the ground is weeded. During the autumn months of March and April the fruit trees and vines are pruned and manure is spread over the land and later ploughed in. In winter and early spring the trees are sprayed to destroy insect pests, and the ground is kept clear of weeds and loosened so that the rain will sink in.

On many farms some of the land is under wheat, for the South-West is the chief wheat producing area in the Union. But the supplies are insufficient for the home demand and much wheat is imported from Australia.

The Sub-Tropical East Coast Region

The East Coast Region, comprising Natal, Swaziland, and the south-east of the Cape Province, may be divided into three zones: (a) the undulating coastal zone; (b) the somewhat higher middle agricultural zone; and (c) the slopes of the Drakensbergs.

The hot wet summers and mild winters make the forested *coastal zone* well suited for sugar-cane, pineapples, bananas, and citrus fruits, such as oranges and grapefruits. Formerly tea was grown on well-drained slopes, but its cultivation has declined and now much is imported from India and Ceylon. Along the warmer northern coast-lands are plantations of sugar-cane where the feathery plants grow in profusion under sunny skies (Plate 7). Enough sugar is produced to supply the needs of the Union. In the sowing season the Indians may be seen bending over the rows planting out the canes in furrows. Later they are busy weeding, and then comes harvest when the tangled masses of cane are cut with sharp knives and taken to the refineries. In the *middle agricultural zone* maize and other cereals,

temperate fruits, and vegetables are cultivated. The lower slopes of the *Drakensbergs* are mainly a pastoral region. The wattle, a species of acacia, introduced from Australia, yields bark for tanning leather—an industry of no small importance in a country where in 1940 there were 40 million sheep, 11 million cattle, and over 6 million goats.

Minerals

Almost half the world's *gold* is obtained from the Union of South Africa where gold accounts for nearly 70 per cent.



FIG. 27. The Production of Gold

1. South Africa; 2. U.S.S.R.; 3. Canada; 4. U.S.A.; 5. Australia

of the country's exports. The chief producing area is the Rand where for 40 miles both east and west of Johannesburg extend the mines to which the city owes its prosperity, and which have made this area the most thickly peopled part of the Union. The precious metal lies embedded in quartz veins (reefs), which may vary in thickness from several inches to 20 feet. More than 300,000 people are employed in the mines, but little more than one-tenth are white people. Some mines are over a mile deep. Some men blast the rock, and others work the machinery by which it is hoisted to the surface. But before the gold can be obtained there are many difficulties to be overcome, for the metal occurs in such fine particles that it cannot be seen by the naked eye.

After the rock has been crushed, washed, and sorted it is ground into an extremely fine powder. This powder is then treated and some of the gold extracted, but as much remains further treatment is necessary. Hundreds of tons of the residue are poured into huge vats contain-

ing cyanide, which dissolves the tiny gold particles, and after further processes the remaining gold is obtained. The huge mounds, looking rather like masses of damaged flour, that disfigure the districts round the mines, are actually dumps of cyanide waste (see Plate 8). In contrast to placer mining, the machinery required for large-scale gold mining, as carried on in the Rand, is extremely costly and the mines are worked by large companies having the necessary capital.

Many of the world's *diamonds* come from South Africa, where they are obtained from mines at Kimberley, from the famous Premier Diamond Mine, 30 miles north of Pretoria, and from South-West Africa (see p. 105).

The Union has large deposits of *coal*, and though not of the highest grade the seams are usually thick and so it can be mined cheaply. The principal mines are round Witbank in the Transvaal and Vryheid in Natal. At Witbank there is a large thermal power station which supplies the Rand gold mines with electricity. Much coal is sent to Durban and Lourenço Marques where it is used for bunkering ships; some is exported to India. There are enormous deposits of low-grade iron ore in the district round Pretoria, and even in the town itself, where it is used in the iron and steel works of the city. But even more important is the high-grade haematite ore obtained in the Crocodile River valley, where the chief centre is Thabazimbi (*thaba* = mountain; *zimbi* = iron), 93 miles north-west of Pretoria. The mines are 'open-pit' workings from which the ore is lifted by huge mechanical shovels. Coal is brought from Natal for smelting these ores, as Transvaal coal is unsuitable.

Copper is obtained from Messina in the north of the Transvaal. *Manganese ore*, mined at Postmasburg (somewhat more than 100 miles westward of Kimberley) is sent by rail to Durban, where there is a special wharf for handling this valuable product.

Towns and Distribution of Population

The most thickly peopled areas in the Union lie round Capetown, Port Elizabeth, and Durban, and on the Rand from the Johannesburg district northward to Pretoria. Capetown and Port Elizabeth are the principal ports. Most new-comers from England to South Africa make their first acquaintance with the Union when, after a sea voyage of fourteen days, they land at *Capetown*, standing on Table Bay and overlooked by flat-topped Table Mountain. Often on a summer's morning the sparkling blue waters of the Bay are scarcely ruffled by the breeze, but sometimes, especially in winter when north-westerly gales blow from the Atlantic, the waters are lashed into fury and giant waves dash high against the breakwater which protects the shipping in the harbour. The port is some 3,000 miles from Rio de Janeiro, and 4,700 miles from Fremantle in Australia. Vessels from Britain travelling by the 'Cape Route' to Colombo, Singapore, and Australian ports call at Capetown, as do ships *en route* from Buenos Aires to Melbourne and Sydney. Capetown ranks as the first exporting port of the Union, for, apart from the fruit and wine produced in its immediate hinterland, it is better placed for trade with Britain than the east coast ports, and is an important outlet for the gold and other minerals of the plateau. As one of the two capitals of the Union it is the meeting-place of the Parliament.

Port Elizabeth, on Algoa Bay, exports wool from the Karroos and fruit from the district around the town. It also assembles motor-cars, using imported parts. To-day *East London* is the principal wool market and wool exporting port in the Union. Its harbour is protected by breakwaters from the South-East Trades, which blow especially strongly in summer.

Durban, though not large when compared with other ports of the Southern Hemisphere, such as Rio de Janeiro

or Sydney, is the chief port on the east coast of Africa. Washed by the sea on two sides, the town is beautifully placed on a sheltered bay. Many ships call here for bunker coal, while colliers load cargoes for India and Aden; and other vessels take aboard maize, fruits, and sugar. From Durban whaling ships sail for Antarctic waters. The port is a terminus of the British Overseas Airways service from London to South Africa. From Durban the railway climbs to *Pietermaritzburg*, the capital of Natal, whence it winds up through the Drakensbergs to Newcastle on its way to Johannesburg.

The importance of *Johannesburg* as the leading town of the world's greatest gold-mining area, together with its central position, has made it a focus of rail, road, and air routes. Of course the mining districts around, with their galvanized-iron buildings and great dumps of waste, are drab and ugly, but in Johannesburg itself are fine streets and buildings, and away from the mining area are pleasant suburbs set on pine-clad ridges (Plate 8). By far the biggest town in the Union, the city is surrounded by smaller industrial centres such as Germiston, noted for gold-refining and a junction on the railway from Pretoria to *Bloemfontein*, the capital of the Orange Free State.

To the north of Johannesburg, in a warm sheltered valley with irrigated orange orchards and tobacco fields, lies *Pretoria*, the seat of the Union Government. It has railway and iron and steel works.

The Development of the Railway System

As most of South Africa is a plateau, little less than a mile above sea-level, which rises by steep escarpments from the coast-lands, the building of railways has been difficult and costly. They avoid the highest part of the Drakensbergs, running from the coast north and south of this area. In its outline the railway system is simple (see Fig. 26). The principal lines run from the ports—Capetown, Durban,

Port Elizabeth, East London, and Lourenço Marques (Mozambique)—through the chief towns of the plateau, to the thickly peopled district around Johannesburg and Pretoria. In the Cape Province, De Aar, owing to its central position, is a busy railway junction. It is doubtful whether many of the lines would ever have been constructed except for the mineral resources. Both the chief mining and the best agricultural areas are in the east, and con-

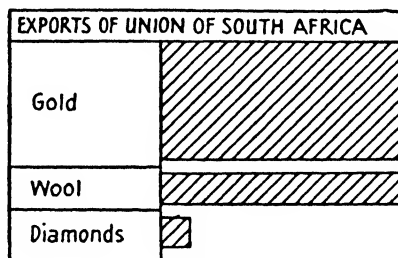


FIG. 28.

sequently it is in this region that the railway net is most widely spread.

The map (Fig. 26) shows that the nearest port to both Pretoria and Johannesburg is *Lourenço Marques*, in Portuguese territory. This port, on a splendid and well-equipped natural harbour, exports fruit and coal from the Transvaal, but as the bulk of South African trade is with Britain an even greater amount of produce is exported through Capetown, better placed, as we have seen, for European trade. From Johannesburg railways run (through Germiston Junction) south-east to Durban; and south through Bloemfontein to Port Elizabeth and Capetown. The main line from Capetown to the Belgian Congo climbs up to the Karroos, and thence north-east across the plateau to De Aar where one line goes south-east to Port Elizabeth, and another north-west to connect with the South-West African Railways. Continuing northward from De Aar, it runs through Kimberley and, after leaving the Cape

Province, enters the Bechuanaland Protectorate on its way to the Rhodesias. This railway was meant to form part of an 'All-British' route from the Cape to Cairo, and as it was built before the Union came into being it avoided the Transvaal and the Orange Free State.

Bechuanaland, Basutoland, and Swaziland

Nearly a million people of Bantu stock have their homes in the British Protectorates of Bechuanaland, Basutoland, and Swaziland where, apart from a few thousand Europeans and Asiatics, they comprise the whole population. In Bechuanaland, which occupies the north central portion of the South African plateau, a quarter of a million people are spread over an area approximately equal to that of the Cape Province. The far smaller but better watered territory of Basutoland (11,716 square miles), tucked away on the western slopes of the Drakensbergs, has half a million inhabitants. Swaziland, whose climate and vegetation resemble those of Natal, is nearly as big as Wales and has a population of 150,000.

The kraals in these Protectorates, like those in the Union, probably differ little in appearance from those of a thousand years ago. Usually clustered on slopes, or along a ridge, they are surrounded by tilled and fallow plots. The villages differ, but often the round huts, built of stone or mud and thatched, are ranged about a central space, and the group is sometimes encircled by a fence of woven reeds, for protection against wild animals. As a rule the village communities, each with its headman, vary from 30 to 500 people, though in Bechuanaland and Basutoland some groups are large enough to form good-sized towns.

When the Dutch and English came to South Africa the Bantu tribes lived by herding, hunting, and growing enough food for their needs. To-day they still graze ponies, cattle, sheep, and goats, but big game no longer abounds and in some districts the men are reduced to hunting rats.

Some tribes produce a surplus, but many do not grow enough mealies, kaffircorn (a kind of millet), and minor crops to supply their own requirements and are obliged to buy stocks from white farmers. In former days the natives were skilled craftsmen. Now they purchase goods from European traders whose stores are scattered at intervals of about half a dozen miles. The sale of hides, wool, and cash crops where available, does not bring in enough money to enable the natives to buy the goods they need, or to pay the poll- and hut-taxes to which every adult male is liable. So to supplement their meagre resources many men leave their kraals, where life moves in leisurely fashion and time is measured by the sun and the seasons, and go to work on farms or mines in the Union or the Rhodesias. No longer do they lead a life suited to their traditions and their environment. In their new surroundings they come into contact with the white man and with natives from other tribes, and acquire new habits as well as a taste for fine clothes, tobacco, drink, and other so-called comforts.

The white rulers of Africa have done much for the health and education of the native peoples, but the greatest of all problems confronting them is to reconcile the ideals of Western Civilization with the more primitive ways of the Africans.

South-West Africa

South-West Africa, surrendered by Germany after her defeat in the Great War of 1914-18, is about three-quarters the size of the Union. The native population, which includes tribes of Bantu stock, Hottentots, Bushmen, and people of mixed origin, numbers about a quarter of a million; but there are only 30,000 Europeans.

So arid is this territory that from the Kunene in the north to the Orange River in the south there is not a single permanent stream, though there are many watercourses which form temporary rivers in the rainy season. The

800-mile stretch of coast along the Atlantic is margined by a strip of desert from 60 to 100 miles wide. In the south of the territory, where the annual rainfall rarely exceeds 10 inches, the country is dotted with salt bush, which provides food for sheep, but as each animal needs 20 acres the farms are even larger than those of the Union. The north, where the rainfall increases to 20 inches, is a savanna region, inhabited by pastoral tribes of whom the Hereros are the most important. Under German rule the tribes were dispersed and their tribal organizations broken up, but since South-West Africa passed under the administration of the Union large reserves have been set apart for them and they have greatly increased in numbers and animal wealth. The European farmers are mainly stockmen. Sheep are reared for hides and wool; cattle chiefly for beef, which is exported through Walfish Bay in *frozen* form as the quality is not high enough for *chilling*. There is some dairying and a few co-operative creameries have been established, but owing to the dry climate the industry has not made great strides.

The chief wealth of South-West Africa lies in its minerals. Copper is mined round Tsumeb, in the north. Diamonds are obtained from the desert strip between Luderitz and the mouth of the Orange. Here at intervals along the coast are huge diamond-washing stations to which trucks of sand are brought by rail; and after the sand has been treated in the washing-plants the residue is passed through hand-sieves from which keen-eyed native workers pick out the diamonds.

As a harbour *Walfish Bay* is far superior to *Swakopmund*, to the north, whence the railway runs to *Windhoek*, the capital of South-West Africa, a thriving little township picturesquely placed on two ridges. It is linked by rail with the Union System, but the journey is as long as it is dreary: both Capetown and Pretoria are over 1,300 miles away.

EXERCISES

1. Name *three* of the chief crops grown in the Union of South Africa together with *one* important area producing each. In each case give *two* reasons explaining why the area you have named is suitable for growing the crop in question.

2. Draw up the diary of a fruit farmer living in the south-west of the Cape Province to show the work carried out on his farm during each month of the year. Start the diary in April.

3. Describe the life led by the people in a village in one of the British Protectorates in South Africa, and show how it is suited to their surroundings.

4. Explain why: (a) European cattle farmers in South-West Africa export frozen but not chilled beef; (b) wool is the second leading export of the Union; (c) most of the Indians in the Union live in Natal; (d) the railway from Capetown to the Rhodesias does not pass through the Transvaal.

5. Draw a sketch-map of South Africa. On it make and name *four* important ports in the Union; *one* port in Mozambique; *two* ports in South-West Africa; the *two* capitals of the Union; and the chief mining centre in South Africa. Shade the most thickly peopled areas. Print *SPARSE* over one thinly peopled region. Fill in the main railway lines connecting the places you have marked on your map.

6. Examine the lower picture shown in Plate 7. Then answer the following questions. (a) What is the name of the crop shown under cultivation? (b) Do you think it is almost ready for harvesting? Why? (c) Estimate the height of the taller stalks. (d) In what part of South Africa is this crop mainly grown? (e) Name two uses of the crop. (f) To what race does the man seen here belong? (g) Do you think this crop is grown in an African village or on a farm owned by a white man? Give your reasons.

CHAPTER XIII

AFRICAN ISLANDS

WHEN we compare the size of Africa with that of the African Islands we are apt to regard most of the latter as small. Yet Zanzibar (see p. 83), a mere dot on the map, is nearly three times the size of the Isle of Man, and Madagascar is actually somewhat bigger than France to whom it belongs.

Madagascar, which ranks after Australia and New Guinea as the largest island in the world, is separated from the mainland of Africa by the Mozambique Channel, in places 10,000 feet deep, and even at its narrowest as broad as the widest part of the North Sea. In its relief the island is a kind of miniature Africa, for the greater part is a plateau, with an average height of from 2,000 to 3,000 feet, bordered by coastal plains which are widest in the west. The South-East Trade winds bring heavy rains to the eastern side of the island, but in the southern summer, when the wind belts have shifted to the south with the apparent movements of the sun, the north-east of the island comes under the influence of the North-East Trades.

The tropical forests of the wet eastern plains are broken by plantations where rice, rubber, cacao, and sugar-cane are grown on the lower lands, and coffee and maize at somewhat greater heights. In the drier west, lying on the leeward side of the plateau, the forests are more open and resemble the better wooded parts of the savannas. The uplands, which owing to their elevation are naturally somewhat cooler than the lowlands, are used for grazing cattle. Meat is canned at *Antananarivo*, the capital, connected by rail with *Tamatave*, the chief port. Madagascar also produces graphite and phosphates.

In the Indian Ocean, some 420 miles east of Madagascar,

is *Réunion*, a French island of volcanic origin. Both the rich soil and the warm climate favour the production of sugar-cane, which is the chief cash crop both in this island and in *Mauritius*, farther east, a British possession.

Above the storm-tossed waters of the mid-Atlantic rise the British islands of *Ascension* and *St. Helena*. In the days of sailing-ships they were visited by vessels sailing before the South-East Trade winds; and until the opening of the Suez Canal were still important ports of call for ships travelling from England by the Cape to India. On both islands are cable stations on the England to Cape Town route, which also touches the *Cape Verde Islands*, a Portuguese possession.

The *Canaries*, Spanish islands off the west coast of Africa, reach a height of over 12,000 feet in *Teneriffe*, the largest island, on which stands Santa Cruz, the capital. This port, like Las Palmas, the biggest town in Gran Canaria, is a coaling-station.

When, after covering 750 miles, the air liner from Lisbon to New York approaches the *Azores* passengers are usually struck by the rugged relief and the conical peaks of the islands. This reminds them (if they know geography) that, like so many Atlantic islands, the Azores are of volcanic origin. The Azores, together with the Madeira Islands, 450 miles west of Morocco, export warm temperate fruits and vegetables to Portugal, to which country both belong.

EXERCISES

1. Give an account of the African islands which belong to Britain, and state, with your reasons, which you think is the most important one.
2. Draw a sketch-map of Madagascar about twice the size of Fig. 29. (a) Shade the area that will receive a heavy rainfall throughout the year. (b) When will the sun be overhead at I? (c) Print the name of each of the crops shown in Fig. 29 over *one* area where it is probably grown. (d) Name the town marked T. What is the time at this town when it is noon at Greenwich? (e) Draw a scale for your map. Show your working.

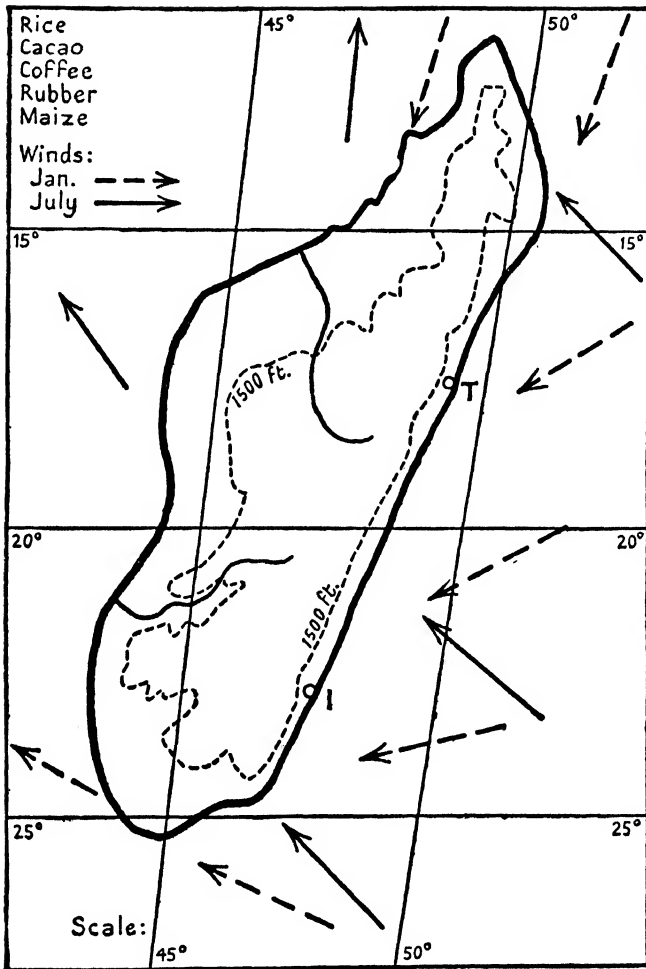


FIG. 29. Madagascar

INDEX TO AFRICA

- Abyssinia, 73-6.
 Abyssinian Plateau, 15.
 Accra, 64.
 Addis Ababa, 74, 76.
 Aden, 73.
 Aegean Sea, 4.
 Agriculture, hoe, 62, 87; shifting cultivation, 62, 67.
 Albert, Lake, 47.
 Albertville, 83.
 Alexandria, 55.
 Algeria, 35, 36.
 Algiers, 35.
 Algoa Bay, 6, 100.
 Anglo-Egyptian Sudan, 49.
 Angola, 6, 69.
 Antananarivo, 107.
 Arabs, 5, 33, 38, 51, 80, 81, 82.
 Asbestos, 88.
 Ascension, 108.
 Asmara, 76.
 Aswan Dam, 18, 48, 52.
 Atbara, river, 48, 75; town, 52.
 Atlas, 33.
 Azores, 108.
 Bahr-el-Ghazel, 47.
 Bamako, 65.
 Bangweulu, Lake, 9, 66.
 Bantus, 12, 67, 80, 87, 91, 103, 104.
 Bathurst, 65.
 Bauchi Plateau, 63.
 Bechuanaland, 103.
 Beira, 84, 89.
 Belgian Congo, 69, 70, 71.
 Belgians, 11.
 Benghazi, 38.
 Benguela Current, 22.
 Benue, 57.
 Berber, 48.
 Berbera, 74.
 Berbers, 33.
 Biskra, 35, 42.
 Bizerta, 36.
 Blantyre, 83.
 Bloemfontein, 101.
 Blue Nile, 48, 50.
 Boers, 91, 95.
 Botha, Gen., 85.
 Brazzaville, 70.
 British Overseas Airways, 52, 84, 89, 101.
 British Somaliland, 74.
 Bruce, James, 7.
 Bukuma, 70.
 Bulawayo, 88, 89.
 Bushmen, 12, 45, 104.
 Cacao, 59, 64.
 Cairo, 49, 55.
 Camels, 42, 51, 74.
 Canaries, 108.
 Cape Province, 92.
 Cape Verde Islands, 108.
 Capetown, 100.
 Carthage, 4.
 Casablanca, 35.
 Cattle, 51, 62, 74, 81, 94, 105.
 Ceuta, 34.
 Chad, Lake, 19.
 Citrus fruits, 94, 97.
 Cloves, 78, 79.
 Coal, 88, 99.
 Coffee, 79.
 Congo, 18, 66-71.
 Constantine, 35.
 Copper, 69, 88, 99, 105.
 Cotton, 50, 53, 62, 79, 80.
 Crete, 4.
 Da Gama, 6.
 Dakar, 65.
 Dar-es-Salaam, 83.
 Dates, 41, 51.
 De Aar, 102.
 Deltas, 49.
 Diamonds, 99, 105.
 Diaz, 6.
 Dodoma, 83, 98.
 Drakensbergs, 92, 98.
 Durban, 100.
 Dutch, 6, 7, 91, 96.
 East London, 100.
 Eastern Rift Valley, 17, 18.
 Elizabethville, 69.
 Entebbe, 82.
 Erg, 41.
 Eritrea, 76.
 Esparto grass, 33.
 Fez, 34.
 Forests, tropical, 28; warm temperature, 31.
 Freetown, 64.
 French, 14.
 French Equatorial Africa, 65.
 French Somaliland, 74.
 Fulani, 12, 62.
 Futa Jallon Highlands, 57.
 Gambia, 64.
 Germiston, 101.

Gezira, 50.
 Gibraltar, 72.
 Goats, 33, 62, 74; Angora, 96.
 Gold, 51, 64, 69, 88, 98.
 Gold Coast, 64.
 Grapes, 97.
 Great North Road, 83.
 Ground-nuts, 50, 64.
 Gum arabic, 50.
 Gwelo, 88.
 Hamites, 1, 11, 80.
 Hanno, 5.
 Harmattan, 58.
 Hausas, 12.
 Henry the Navigator, 5.
 High Veld, 93-5.
 Hottentots, 12, 45, 104.
 Huguenots, 96.
 Ibadan, 63.
 Indians, 82, 97.
 Inland Drainage, 19.
 Iron ore, 35, 99.
 Irrigation, 50, 51, 52, 53.
 Islam, 5.
 Italian East Africa, 76.
 Italian Somaliland, 76.
 Italians, 11.
 Ivory Coast, 65.
 Jebba, 63.
 Johannesburg, 101.
 Kalahari Desert, 12, 23, 30, 44, 45.
 Kambove, 69.
 Kampala, 82.
 Kano, 63.
 Karroos, 92, 95, 96.
 Kassala, 50.
 Kayes, 65.
 Kenya, 14, 77, 82; peak, 18.
 Khartoum, 47, 48, 51.
 Kilimanjaro, 18.
 Kilindi, 80, 82.
 Kilo-Moto, 69.
 Kimberley, 99.
 Kirunga, 18.
 Kisumu, 82.
 Kopjes, 93.
 Kumasi, 64.
 Lagos, 62.
 Leopoldville, 70.
 Liberia, 57.
 Libya, 36, 37.
 Limpopo, 92.
 Livingstone, David, 8-10; town, 87.
 Lobito, 69, 70, 88.
 Lourenço Marques, 99, 102.
 Luderitz, 105.
 Lukuga, 66.
 Lusaka, 87.

Madagascar, 107.
 Maize, 60, 88, 94, 97.
 Makwar, 50, 52.
 Malta, 72.
 Manganese, 99.
 Marrakesh, 34.
 Matadi, 18, 70.
 Mauritius, 108.
 Mediterranean Climate, 25, 26.
 Messina, 99.
 Millet, 50, 53, 62, 75, 81, 87.
 Mogadishu, 74.
 Mohair, 96.
 Mombasa, 6, 82.
 Morocco, 34.
 Mozambique, 11; current, 22.
 Mweru, 66.
 Natal, 97, 99, 101.
 Negroes, 38.
 Niger, 18.
 Nigeria, 62-4.
 Nile, 3, 4, 47-9; floods, 52, 53.
 Nyasa, Lake, 8, 77.
 Nyasaland, 79, 83.
 Oil-palms, 59, 64.
 Olives, 33, 34.
 Omdurman, 51.
 Oran, 35.
 Orange Free State, 7, 91, 101.
 Orange River, 92.
 Ostriches, 96.
 Oxen, 94.
 Park, Mungo, 8.
 Pemba, 78, 81, 82, 83.
 Philippeville, 35.
 Phoenicians, 4.
 Phosphates, 35, 36.
 Pietermaritzburg, 101.
 Port Elizabeth, 100.
 Port Harcourt, 63.
 Port Said, 55, 72.
 Port Sudan, 50, 51, 52, 73.
 Postmasburg, 99.
 Pretoria, 101.
 Pygmies, 12.
 Quilimane, 8.
 Raft Lakes, 47.
 Rand, the, 98, 99.
 Red Sea, 73.
 Rejaf, 47.
 Réunion, 108.
 Rhodes, Cecil, 85.
 Rhodesia, 14, 85; Northern, 87;
 Southern, 88, 89.
 Rice, 53.
 Rift Valleys, 17, 77.
 Rudolf, Lake, 19.

Sahara Desert, 20, 30, 34, 39-43.
 St. Louis, 65.
 St. Vincent, Cape, 5.
 Salisbury, 88, 89.
 Salt, 51.
 Savannas, 29, 50.
 Senegal, 65.
 Sennar, 50.
 Sfax, 36.
 Sheep, 33, 74, 94, 95, 96, 105.
 Shiré, 8, 9.
 Shotts, 32.
 Sierra Leone, 64.
 Simooms, 42.
 Sisal, 79.
 Siwa, 42.
 Smuts, Gen., 85.
 Sobat, 48, 75.
 Soil erosion, 95.
 South-West Africa, 104-6.
 Stanley, Falls, 66; H. M., 9, 10; Pool, 66.
 Stanleyville, 70.
 Sudan, 26, 49.
 Sudanese, 12.
 Sudd, 47.
 Suez, Canal, 15, 55, 72, 73; Isthmus, 15.
 Sugar-cane, 53, 97, 108.
 Swahili, 81.
 Swakopmund, 105.
 Swansea, 59.
 Swaziland, 103.
 Takoradi, 64.
 Tamatave, 107.
 Tana, Lake, 19, 48, 75.
 Tanezruft, 41.
 Tanganyika, Lake, 9, 17, 66, 77, 79, 83.

Tangier, 34.
 Tell, 32.
 Teneriffe, 108.
 Thabazimbi, 99.
 Tibesti Highlands, 40.
 Tin, 63.
 Tobacco, 79, 94.
 Transvaal, 7, 91, 94, 99.
 Tripoli, 38.
 Tsetse fly, 67, 81, 83, 86.
 Tsumeb, 105.
 Tuaregs, 11, 42.
 Tunis, 36.
 Tunisia, 36.
 Udi, 63.
 Uganda, 82.
 Ujiji, 9, 83.
 Vaal, 92.
 Verde, Cape, 6; Islands, 108.
 Victoria, Falls, 8, 86; Lake, 15, 17, 19, 47, 78, 81.
 Vines, 97.
 Vryheid, 99.
 Wady Halfa, 51.
 Walfish Bay, 105.
 Wankie, 105.
 Western Rift Valley, 17, 18.
 Wheat, 97.
 Windhoek, 105.
 Witbank, 99.
 Wool, 96, 100.
 Zambezi, 8, 18, 86, 87.
 Zanzibar, 5, 78, 81, 82, 83.
 Zaria, 63.
 Zomba, 83.

